Public Utilities

Volume 68 No. 9 October 26, 1961

VARIABLE ANNUITIES AND UTILITY PENSION PLANNING
By Willard F. Stanley

« »

A Utility Foundation Program for Professors
By William F. Barber

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Reproduction Cost as a Basis for Ad Valorem Railroad Taxation
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Public Utilities FORTNIGHTLY

VOLUME 68 OCTOBER 26, 1961 NUMBER 9

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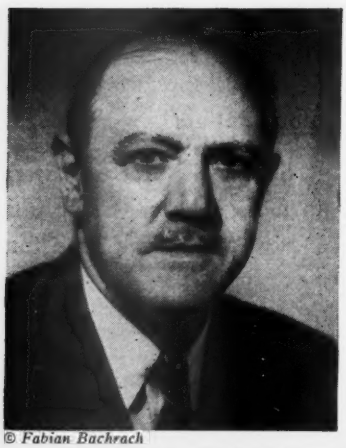
Pages with the Editors

ABOUT three decades ago, when gas and electric utilities, and more particularly holding companies having control of them, were favorite headline targets, any attempt to influence educators was a very sensitive topic. The Federal Trade Commission, which had been given the task of investigating the utilities and their holding companies, dredged up some instances of public utility companies seeking to influence some college professors and extend the influence of others who already were friendly to their cause.

As a result of this, a hostile press, which in those relatively peaceful days had not much else to occupy its attention, had a field day with headlines, such as "Utilities Poison the Well of Knowledge," and "Utilities Invade the Campus," and "Professors on the Payroll." The population of that day was duly shocked and the Federal Trade Commission went on to make some caustic findings in its ultimate report on improper utility influence on American academic life. As a result of this unpleasant experience, some of the utility companies for many years gave the professors a wide berth and vice versa.



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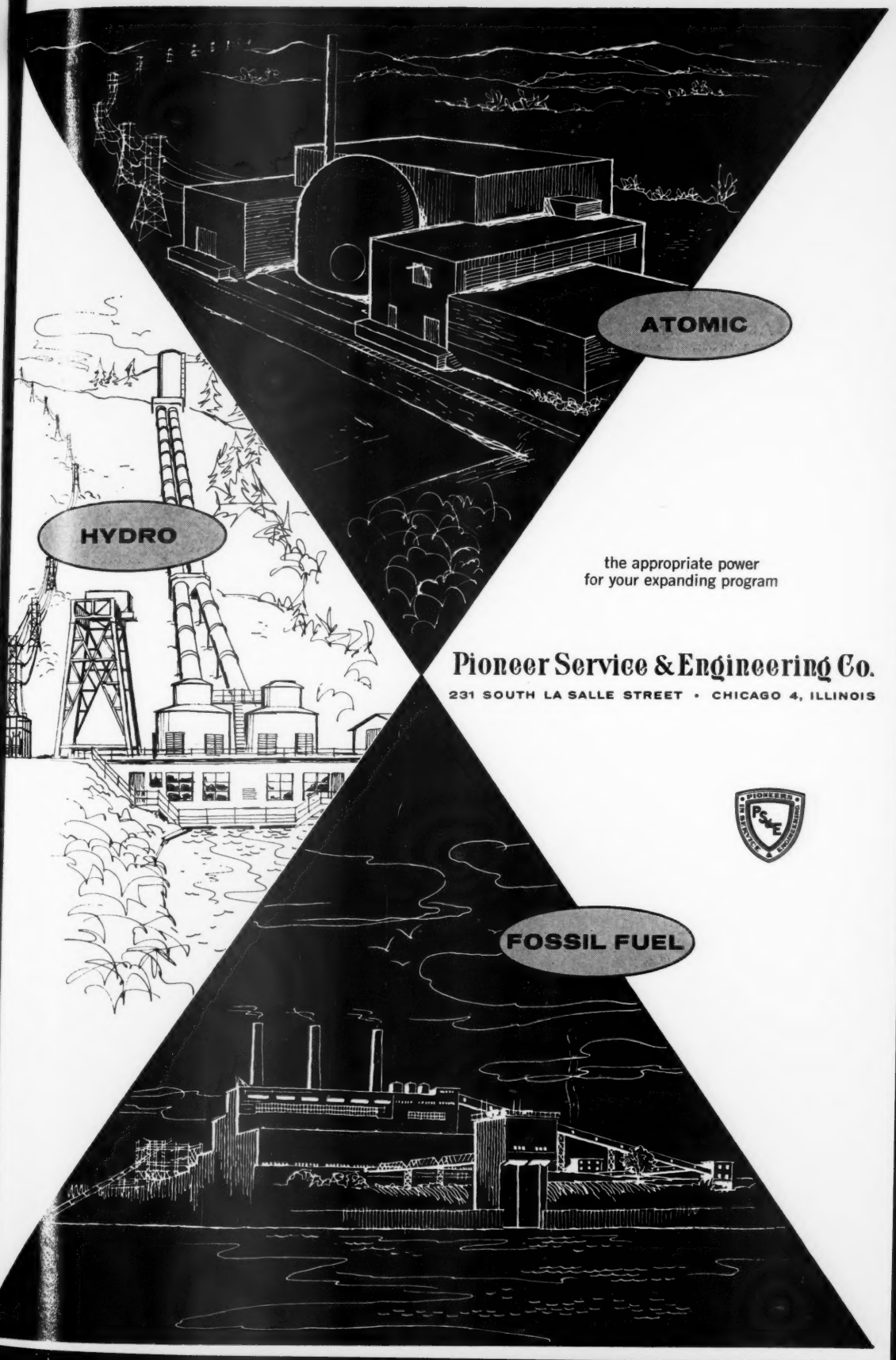
WILLARD F. STANLEY

WILLIAM F. BARBER

THE consequent breakdown of communication between the teachers of our colleges and professional people and an important essential segment of our business economy resulted in some mutual suspicion and distrust. Whether this made some professors antiutility is at least debatable. But it is a fact that many utility companies for some years went into their holes and pulled the holes in after them, so to speak. This, in turn, left the propaganda field wide open for utility critics and they made the most of it.

MORE recently there has been an awakening among a good many segments of our society, *outside* the public utility field, that there is nothing wrong or improper about establishing a rapport with the teaching profession in our colleges and universities. The labor unions, among others, made the discovery that teachers were a natural and valuable outlet for new ideas and developments concerning various phases of our national life. It was found there was nothing wrong about making information available to the professors in a systematic way, provided, of course, it was all voluntary and no effort was made to sway independent judgment and individual integrity of the professors.



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BUT the burnt child fears the fire and a burnt utility industry was mighty squeamish for a number of years about breaking out of its self-insulated position as far as the teachers were concerned. Finally, it was seen among utility men that everybody else was doing it, and that some professors were developing antiutility attitudes by sheer default of information being made available to them on an unbiased basis.

AND so there arose a new attitude on utility-campus relations as far as the teachers are concerned. A number of college professors are now being given the advantage of summer training programs of research in the area of actual public utility operations. Nineteen gas, electric, and communications public utility companies sponsored a total of twenty-eight college professors during the summer of 1961. The key to the new attitude, of course, is absolute noninterference with the teachers' learning and conclusions. It is simply a matter of making information available and then letting the teachers draw their own conclusions without any help or influence from the sponsoring companies. The teachers have responded to this and perhaps this marks a new era of co-operation.

IN this issue, beginning on page 662, we are presenting an article by a young professor who was among the number given the advantage of a summer training program of research in utility operations. He is WILLIAM F. BARBER, assistant professor of marketing at San Diego State College, San Diego, California. He is teaching courses in advertising, general marketing, and marketing management. He recently received his degree as Doctor of Business Administration from the University of Washington (Seattle).

ROY L. LASSITER, JR.

* * * *

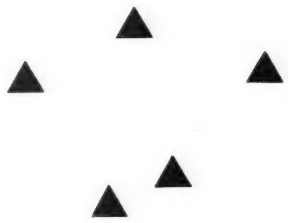
ANOTHER professor who writes for us in this issue is ROY L. LASSITER, JR., associate professor of economics at the University of Florida, Gainesville, Florida. His article on "Reproduction Cost as a Basis for Ad Valorem Railroad Taxation" begins on page 667. DR. LASSITER has been an economic consultant to the Central & Southern Florida Flood Control District and an economist with the U. S. Department of Agriculture. His published articles have appeared in the *Journal of Land Economics*, the *Appraisal Journal*, and the *Journal of Insurance*. DR. LASSITER wishes to express some acknowledgement of benefits derived from this topic of ad valorem railroad taxation from discussions with Professors M. Z. Kafoglis and J. G. Richardson.

* * * *

THE leading article in this issue deals with variable annuities and utility pension planning. Variable annuities are based on the principle that all retired persons need and want after their retirement is not a periodic fixed number of dollars but rather a reasonably consistent standard of living. How such payments can be made to reflect adjustments for loss of purchasing power during periods of steady inflation is a problem to which WILLARD F. STANLEY, New York author of business articles, addresses himself.

THE next number of this magazine will be out November 9th.

The Editors



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—NOVEMBER 9, 1961, ISSUE—

FEDERAL-STATE CONFLICTS AND UTILITY REGULATION

A comprehensive survey, which serves to tie together a number of legal concepts and decisions dealing with regulation in the field of public utilities and transportation, has been prepared by Roy J. Sampson, assistant professor of transportation at the University of Oregon. The author traces the development of utility regulation in this country, discusses important "landmark" cases which have served to define and limit the power of regulatory bodies, and explains the relationship between the federal government and individual states in the regulation of interstate commerce.

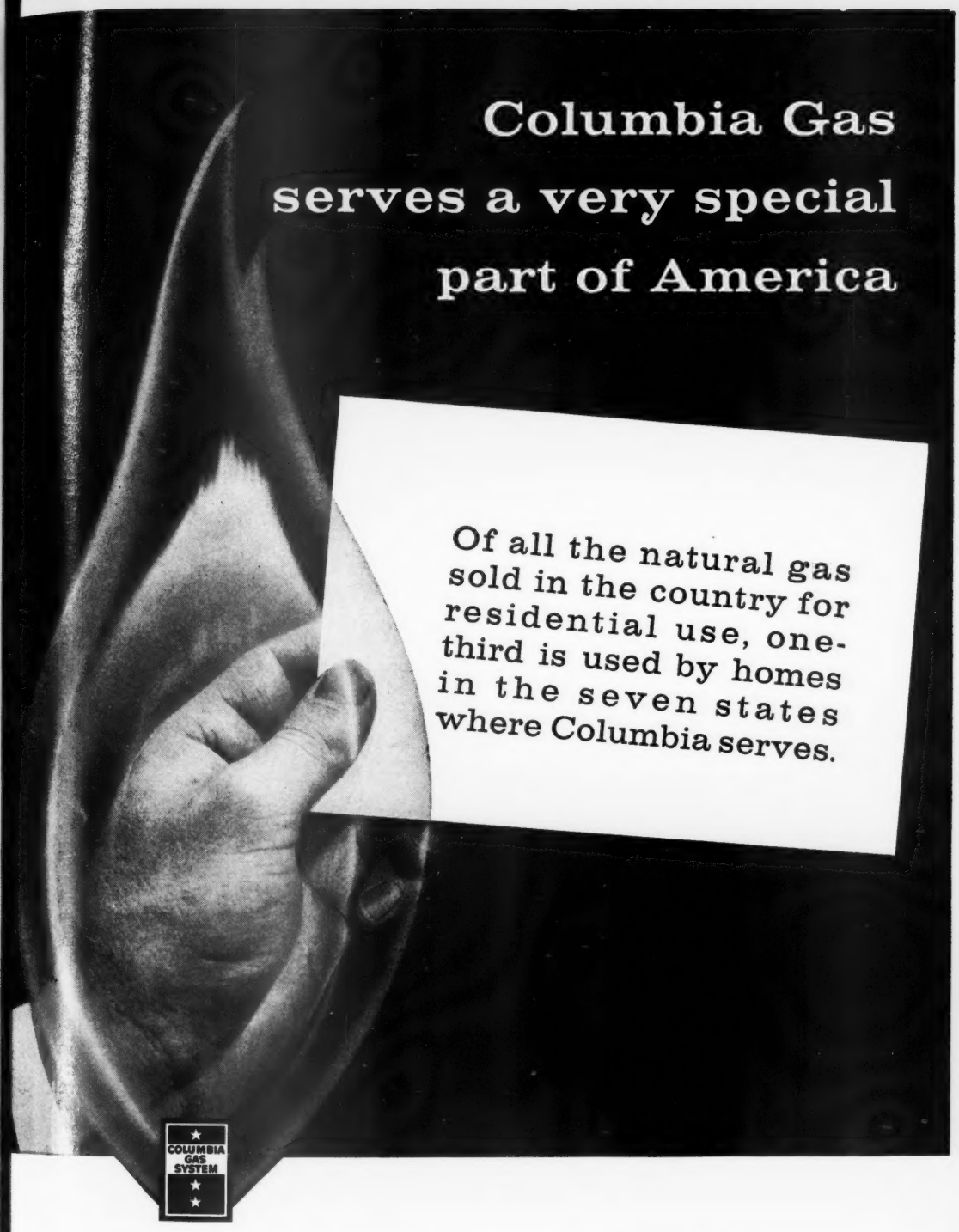
"FOOT-IN-THE-DOOR" LEGISLATION AND THE UTILITIES

The technique of "piecemeal" legislation, by which many controversial measures are pushed through Congress on the "one-part-now" and "another-part-later" theory, is discussed in this article by Charles M. Bruch, PUBLIC UTILITIES FORTNIGHTLY associate editor. Using two items of legislation taken up by the recent session of Congress—the Hanford, Washington, nuclear power plant, and the federal power grid for western states—the author traces the thinking which engendered this type of legislation and analyzes the thinking of both houses of Congress which resulted in the Hanford proposal being defeated, and the federal power grid plan being passed.

THE INDEPENDENT GAS PRODUCER REGULATORY EXPERIMENT

This frank article by Cecil E. Munn, Texas attorney, points out the shortcomings and strong points of the federal government's attempts, through the Federal Power Commission, to regulate independent gas producers. He discusses administrative problems which have faced the FPC during the past decade, looks into recent criticism which has arisen over the agency's policies, its attempts to expedite the mounting number of rate cases, the events which led up to the famous Phillips decision, and events which have followed since the opinion was handed down.

AND IN ADDITION . . . ***Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.***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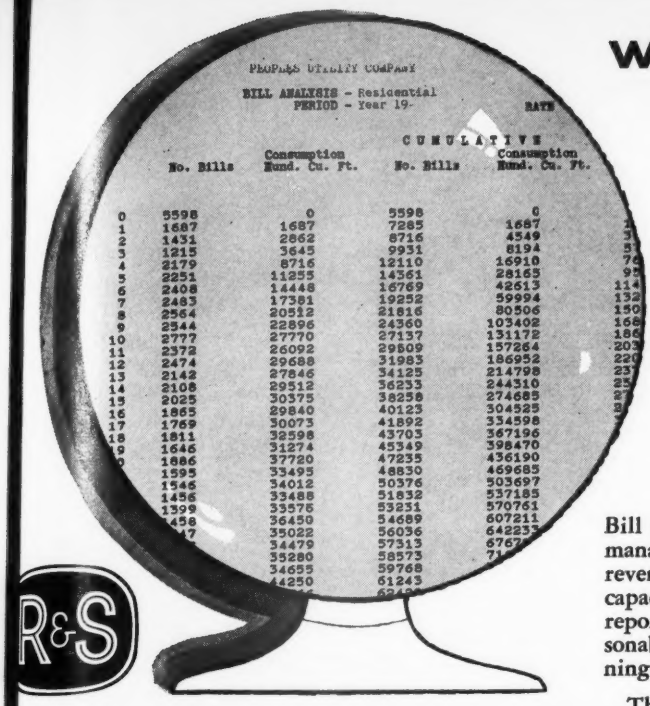

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by **Francis X. Welch, B. Litt., LL. B., LL. M.**

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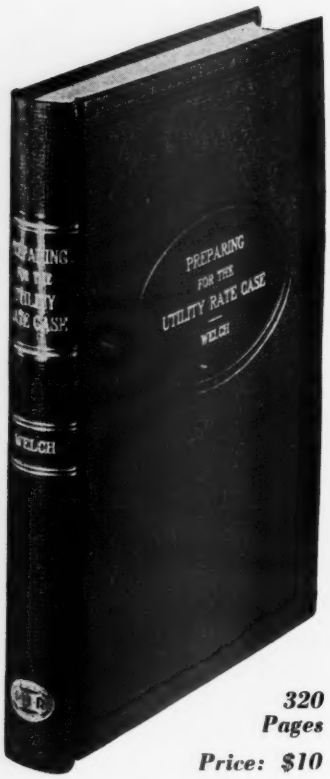

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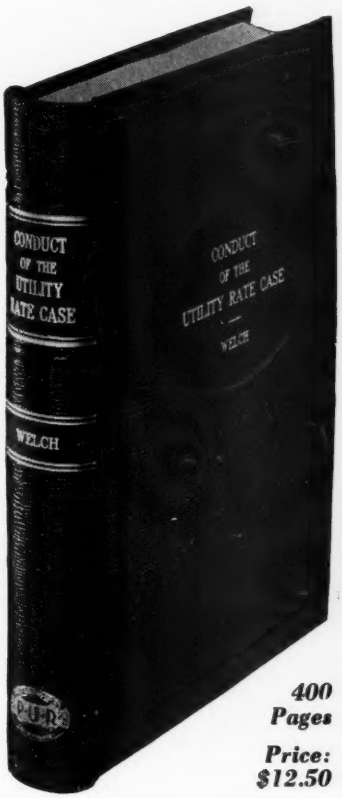

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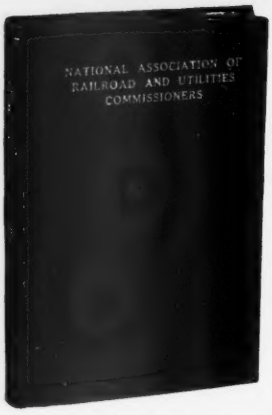

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Oct. 26-27—Pennsylvania Electric Association, Relay Committee, will hold meeting, Altoona, Pa.

Oct. 26-27—Southeastern Electric Exchange, Engineering and Operation Section, will hold conference, Biloxi, Miss. (Closed session.)

Oct. 26-27—Virginia Telephone Association will hold annual convention, Roanoke, Va.

Oct. 26-28—Southwestern Legal Foundation will hold planning and zoning institute, Dallas, Tex.

Oct. 29-31—Independent Petroleum Association of America will hold annual meeting, Houston, Tex.

Oct. 29-31—Kansas Association of Municipal Utilities will hold annual convention, Wichita, Kan.

Oct. 29-Nov. 1—American Water Works Association, Florida Section, will hold annual meeting, Orlando, Fla.

Oct. 30-Nov. 1—Edison Electric Institute, Insurance Committee, will hold meeting, St. Petersburg, Fla.

Oct. 30-Nov. 1—Institute of Radio Engineers-Electronic Industries Association will hold joint annual radio fall meeting, Syracuse, N. Y.

Nov. 1-3—American Water Works Association, Chesapeake Section, will hold annual meeting, Baltimore, Md.

Nov. 2-3—Public Utilities Advertising Association, Region 4, will hold meeting, Indianapolis, Ind.

Nov. 2-4—Association of National Advertisers will hold annual national meeting, Hot Springs, Va.

Nov. 4-7—National Retail Lumber Dealers Association will hold convention, Chicago, Ill.

Nov. 5-8—National Frozen Food Association, Inc., will hold convention and exposition, Bal Harbour, Fla.

Nov. 6-8—Edison Electric Institute, Accident Prevention Committee, will hold meeting, Birmingham, Ala.

Nov. 6-10—American Nuclear Society, Atomic Industrial Forum, Atom Fair, and National Youth Conference on the Atom will hold meetings, Chicago, Ill.

Nov. 6-10—National Hotel Exposition will be held, New York, N. Y.

Nov. 6-10—National Warm Air Heating and Air Conditioning Association will hold annual convention, Chicago, Ill.

Nov. 8-9—Oklahoma Telephone Association will hold annual convention, Oklahoma City, Okla.

Nov. 9-11—American Bar Association will hold regional meeting, Birmingham, Ala.

Nov. 12-14—Alabama-Mississippi Telephone Association will hold annual meeting, Birmingham, Ala.

Nov. 12-15—Air Conditioning and Refrigeration Institute will hold annual meeting, Hot Springs, Va.

Nov. 13-17—National Electrical Manufacturers Association will hold annual meeting, Atlantic City, N. J.

Courtesy, Westinghouse Electric Corporation

Lighting Up the New Stadium in the Nation's Capital

Already called by some sports writers "the melted doughnut" because of its unusual undulating exterior appearance, the new stadium in Washington, D. C., will be lighted by some 2,136 floodlights made by the Westinghouse Electric Corporation. To the left in the above photo can be seen the largest of eight banks of lights which was nearing completion at the time of this picture.

Public Utilities
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Variable Annuities and Utility Pension Planning

Variable annuities are based on the principle that all retired persons need and want after their retirement is not a periodic fixed number of dollars but rather a reasonably consistent standard of living. How such payments can be made to reflect adjustments for loss of purchasing power during periods of steady inflation is a problem to which this author addresses himself.

By WILLARD F. STANLEY*

ALTHOUGH more than ten years have elapsed since the concept of variable annuities was first discovered and disclosed to the public, it is believed that many have not yet fully realized the contributions which this concept can make to solving the problem of inflation with respect to pension plans and in building better employee morale.

Variable annuities are based on the principle that what retired persons need and want after their retirement is not a periodic fixed number of dollars, but, rather, a reasonably consistent standard of living. What they really want are so many steaks, so many bottles of milk, etc., such and such a quality and quantity of clothes and housing. The dollars are simply incidental to getting these things. If the dollars are not sufficient in number to provide the desired standard of living then the pension plan has failed in its purpose. In other words, the conventional pension plan does not protect against price inflation, despite the fact that, over protracted periods, price in-

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flation has been the rule both in this country and Great Britain.

THE variable concept seeks to protect against inflation by attempting to raise the number of dollars available for the pension to keep reasonably in pace with the increase in prices. This is accomplished through the investment of the pension funds in a diversified, selected list of sound common stocks of leading American industrial, utility, and railroad corporations instead of in bonds and other fixed dollar obligations. The shares attributable to each person's pension are sold as the pension payment becomes due and the pensionee receives a number of dollars equal to the proceeds of such sale instead of a fixed number of dollars.

Two basic facts seem amply demonstrated in terms of protracted periods of American economic history. The first is that over such periods there has been a constant increase in the index of living costs in terms of prices which must be paid for commodities and services. For instance, the price index rose about 200 per cent in the first half of this century. It has risen something like 28 per cent in the last ten years or so. The same general pattern is portrayed for prior periods.

In England, for instance, except for a plateau during the nineteenth century due to the prosperity arising from the Indian possessions, there was a steady increase in the price of gold, extending from 1280 to about 1800. Strangely enough, the line of ascent was almost constant, the percentage increase for each century being relatively equal. The upward price movement was resumed in England beginning with World War I and has continued unabated to date.

THE second basic fact is that it appears that the stock averages tend generally to accompany the movement of the price index. This is true over the long pull, although not for certain short periods. Pension plans must, obviously, look to the long pull both for their accumulations and their distribution. For instance, in the first half of the twentieth century, while the price index was rising 200 per cent, stock averages rose somewhat less than that.

However, within five years thereafter, the stock average had risen to a point where it about equaled the increase in the price index for the fifty-five years, and, extending this period to sixty years, we find that the stock average has now considerably exceeded the price index in terms of percentage increase during this century to date.

THE foregoing seems to demonstrate the validity of the two above basic factors: First, that price inflation is the rule in American economics over long periods of time, and that declining prices over the shorter term are in the nature of an exception. Second, that the most effective practical way of protecting pensions against this to be expected price inflation is to invest the pension fund contributions in a diversified list of stocks as mentioned above. There will be periods, no doubt, when, as in the past, the average price of these stocks will decline, but it is to be expected that, if this occurs, this decline will be accompanied by a reasonably relative decline in price levels.

It has, however, occurred over relatively short periods that stock averages have declined without a corresponding decline in the price index. To protect against this eventuality, it has been suggested that the variable pension trust might provide that if stocks rose so that the periodic payments were more than 10 per cent higher than the increase in the price index for the period, then the excess of stock proceeds would be set aside in a reserve to take care of the possible lean future years when stock prices might decline more than 10 per cent below the reduction in price levels. Of course, substantially the same sort of reserve could be set up by individual pensioners to avoid the possibility of undue changes in their standard of living from year to year.

Private Pension Funds

THE banks and other institutions which act as trustees under the numerous pension trusts—which trusts now have assets something more than half of the accumulated total assets of all private pension funds throughout the nation (the balance of these funds being covered by group annuity contracts with insurance companies)—have, in recent years, come increasingly to recognize the validity of the two above mentioned basic factors (*i. e.*, future inflation and stock investment). Each year for the past ten or more has swelled the portion of the funds of pension trusts invested in common stock, until today this represents between 25 per cent and 30 per cent of the total assets of all these trusts.

Furthermore, these institutions are investing in common stocks on the average around 50 per cent of the annual contributions to the trusts. It appears this trend has now gone about as far as it should from a standpoint of sound finance. There is obvious danger in investing in stocks (the best of which are always more or less volatile and subject to decline), funds against which there exists an obligation to pay a fixed number of dollars.

This factor has always been recognized with respect to life insurance companies. For instance, until recently such companies in New York state could not invest in common stocks. Even after the recent change in the law, such investment is limited to 3 per cent of surplus or an infinitesimal per cent of total obligations of the company. Since, therefore, there must or should be a distinct limit to stock investment by conventional pension trusts, it follows that full protection against inflation is obtainable solely through applying the variable concept.

DESPITE the apparent advantage of the variable annuity concept, no utility, to the knowledge of the writer, has yet adopted such a program. In the industrial field, some half-dozen or more companies have adopted pension plans embodying, in some form, the variable

principle, but this is a small segment out of perhaps 3,000 such corporations, even considering only those with publicly held shares and many employees. There has, to the writer's knowledge, never been any legal impediment in any state to the adoption of a variable pension trust by a corporation. The other alternative, a group annuity contract for the pensions with an insurance company, has been rigidly restricted by law. Even today, it is believed that only one state, New Jersey, plus the District of Columbia, permits insurance companies to offer such annuities for sale to corporations or individuals.

For many years past the Prudential Life Insurance Company of Newark, New Jersey, has endeavored to promote the passage of legislation in that state permitting such annuities. Recently it was successful and a law permitting variable plans was adopted. It is assumed that company has now reached a point where it is prepared to offer such plans. It is believed such offerings were delayed for a while by organizational problems. The District of Columbia law permitting such annuities has been in force for many years and an insurance company was organized within the past ten years to sell specifically variable annuities.

In American Colleges

THE writer feels that he can claim some intimacy with the variable annuity idea since, in June, 1950, he submitted an article to *The Saturday Evening Post* advocating this type of pension plans.

This article was not directed to the pension experts but to the "man in the street," but the *Post* at that time felt that the subject was a bit too technical for its readership.

If the writer's recollection is correct, in December of 1951 the association which administers the pension funds for the faculty of most of the American colleges, announced a variable plan applicable to these faculty members. The variable portion of the plan was limited to 50 per cent of the pension fund, thereby in effect making the overall pensions at least 50 per cent conventional fixed dollar payments and up to 50 per cent variable payments based on stock investments. It is quite possible that this association was investigating the variable concept before the writer submitted his article. At or about the same time one or two others, apparently also acting independently, published material dealing with the same basic concept of variable annuities.

FURTHERMORE, and apart from the development of the variable idea, utility employees, like those of industrial enterprises, and particularly those in the higher age and salary brackets, have for many years been concerned about the ravages of future inflation upon their retirement income. This constitutes a factor of bad employee morale which should largely be remedied by adopting the variable annuity principle.

Despite all this, and the publicity which has attended the matter, we find today the situation seems to be about as above outlined, with only a fragment of the eligible corporations having taken advantage of the variable principle.

WHY this disinclination to obtain the apparent benefits for their employees and themselves which the variable feature

seems to hold, in protecting against future inflation and fostering better employee relations, particularly in the upper age and salary brackets? First and foremost the plan must plead guilty of being radically novel. That has no doubt retarded its acceptance. And then, its failure to be adopted by numerous companies has, in turn, prevented its adoption by others.

THERE is a small mountain of conventionalism and conservatism to overcome before such a plan can be adopted. The conventionalism exists and is real but the conservatism is largely false, for how can a plan, such as the conventional ones, be considered sound and conservative which gives a $200 per month pension for life when all known economic history indicates that over the fifteen years the retiree may be expected to survive, a total increase in price levels of from 30 per cent to 35 per cent may reasonably be expected to occur. How can anyone judge such a pension plan safe and sound and a variable plan of a speculative nature merely because it involves investment in common stocks? Yet many seem to hold to such views even in this economically enlightened day and age.

IT is hard enough to sell such a drastically novel plan to management, without being able to refer to an impressive list of other companies using it. But even if management becomes interested it is more difficult still to sell such a plan to the "outside" directors of the company (*i.e.*, those not connected with the management as officers or employees, of which most utilities have several on their boards). Those gentlemen are likely to be more conservatively minded than management and without a formidable list of companies adopting the plan will almost inevitably vote against it.

Nor is it feasible to adopt such a plan over their objections even if a favorable majority vote is obtainable, for most managements would probably insist that such a radical departure from convention should be adopted unanimously.

Mistrust of Stocks

EITHER members of management or "outside" directors may contend that

the average employee does not understand stocks; that he mistrusts them; that he would be likely to oppose any plan calling for his pension funds to be invested in this medium.

These views can be contested, but it is difficult to prove them specifically to be wrong. Under these circumstances, a proposal for a variable plan is almost certain to be defeated.

But the writer feels there is a way out of this basic difficulty of conventionalism. It is a strange irony that the members of management that might turn down such a plan as too drastically different—as not sufficiently "seasoned" through adoption by others—would individually vote for such a plan in their capacity, not as company officers but as future pensioners and would be happy to accept such a plan in their latter capacity.

THE crux of successful action on such a plan seems to the writer to be to approach the subject, not on an overall basis, with a plan applicable to all officers and employees including the rank and file, but by echelons. For this purpose the first step would be the selection by management of a top echelon. This echelon might consist, for the average sized utility, of those with annual salaries of $15,000 to $20,000 or more, these figures varying with the size of the company and the generosity of its compensation policy. This might normally produce a group of about twenty people to whom it would be relatively simple to submit the proposed plan with proper explanations. This group would naturally consist mostly of the older people, those particularly cognizant of inflation and particularly concerned over their pension problem in the light of higher prices to be expected in the future.

Furthermore, this group is certain to be that most sophisticated "common stockwise" and most of them will probably be found already to hold common stocks either in the utility or other corporations.

UNDER these circumstances, the plan, if properly and fairly presented, can hardly fail to obtain almost unanimous approval by the members of this top echelon group. Once this approval is given, adoption of the variable plan, limited to this group, tends to become much easier from a practical standpoint. The management, if it was originally in doubt on the matter, is naturally impressed by the response, particularly as the members of management probably were aligned among those approving the proposal individually. Their objections to the novelty of the plan are overcome when the plan is thus limited to a relatively small group, a substantial majority of whom already have signified their desire to have it. No need to worry about the reaction of the rank and file employee. Naturally, no one would be required to accept the variable pension unless he so desired.

When the management then brings the matter to the attention of the board for final approval, they now have behind them the strength of a demonstrated desire for the new plan by those or most of them who would be affected thereby. It should be difficult for an "outside" director to refuse to go along under these circumstances. He would be taking the responsibility for bad morale on the part of the top echelon people who, after being of-

fered the new plan, would now find it withdrawn from them.

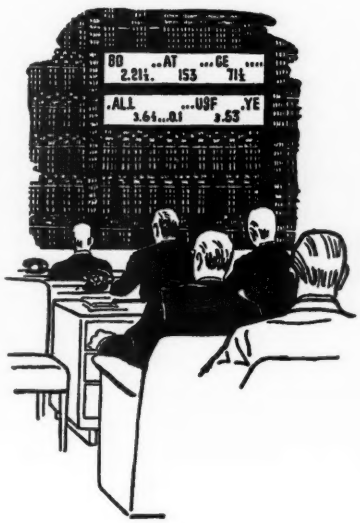
Variable Feature Dropped

THE belief that such a top echelon group would mostly approve such a plan is not a mere assumption. The writer knows of at least one specific case where such a plan was submitted to a group of twenty top echelon people (those with $10,000 salaries or greater). It was felt wise in this case to discuss the matter personally with each member of the group. Three members were located distantly and not likely to come to the main office for some time. Therefore, they were omitted from the submission. One hundred per cent of the other seventeen members of the group voted for the variable plan, limited to their group.

Before the matter could be cleared with the directors, however, strong pressure arose to change the existing plan so as greatly to increase the amounts of the pensions. In view of this substantial adjustment the variable feature fell by the wayside. Before this happened, however, two matters of importance to the adoption of a top echelon plan had been explored. One of these was approval of the plan by the Treasury Department, which is necessary if the company is to be permitted to deduct its contributions to the plan for income tax purposes.

THE only supervision of pension plans customarily exercised by the Treasury Department in giving its approval is to see that there is no discrimination in favor of any person or group. In view of the fact that under the variable proposal one group would have the pension funds invested differently from the others, the proposal was taken up with the local representative of the Treasury on pension plans. When he found that the contributions were to remain the same and that only investment of the funds would differ, he expressed the opinion (subject to Washington review—which, of course, never occurred in this case) that the plan would be approved by the Treasury. He deemed the limitation of the plan to the top echelon a desire to protect the lower-paid employees from the dangers inherent in stock investment.

THE second point is whether a part of a pension program can, so to speak, be disengaged from the rest. Where the original plan is a pension trust, there should normally be no difficulty in starting a new trust and ceasing contributions to the old as to the top echelon people adopting the variable plan. But where (as was the case here) the pension was covered by a group annuity contract with an



insurance company, it is necessary to see that in such disengagement the contract is complied with. Such contracts usually provide that a certain relatively high percentage (usually 85 per cent to 90 per cent) of employees must be covered by the contract. There was no problem in ceasing contributions as to the relatively small number of top echelon people adopting the variable plan as this would not change even by 1 per cent the total coverage where 2,000 or more employees are involved. In such a case the disengaged top echelon people would have their plan handled under a new pension trust which would then be set up for that purpose.

BUT this is only a first step. No doubt many in salary brackets below those included in the top echelon would gradually come to hear of the new variable plan and of its benefits as a protection against future price inflation. Is not it reasonable to suppose that many of them might ask the management why they could not participate. If this pressure should prove strong enough, a survey of a secondary echelon group, perhaps consisting of those with salaries ranging from the top echelon minimum down to perhaps half that figure, might be made by management. If the result showed a majority of this group favorable to the variable feature, the management could then readily obtain unanimous board approval for the extension of the variable plan to this group, also to the extent that members thereof desired to avail themselves of the privilege.

To the writer's knowledge, such a second step has not yet been specifically discussed with the Treasury Department as to its approval for tax purposes. However, it seems likely that the Treasury would approve the secondary step largely on the same grounds upon which it already had passed favorably upon the top echelon group.

A GREATER problem would be presented on the secondary step where the pensions had, previous to adoption of the variable concept, been covered through a group annuity contract with an insurance company. The addition of the secondary group might, in some cases, bring the total employees still covered by the group policy below the permitted minimum under the contract. In such a case the insurance company would have the alternative either of stretching a point to permit the secondary step to become effective or of canceling the entire contract.

Since the latter course would remove from the group coverage the numerous rank and file employees of the company and thus be definitely against the interest of the insurance company, it seems probable that some way would be found whereby the insurance company would continue to carry the rank and file and let the two top groups be covered by a pension trust. Such a way might be by canceling the old contract and entering into a new one which would only apply to company employees with wages below the minimum for the secondary group. This would restore the necessary minimum percentage of group coverage as to this lower wage group.

Open to All

ULTIMATELY, under similar procedures, it seems logical to suppose that the variable plan might, at some later date,

be extended feasibly to all employees desiring to participate therein. Such a case would pose no Treasury Department problem and would involve simply canceling any insurance company contract with respect to all future contributions.

THE writer believes that even among the rank and file employees there are many who know of and fear future price inflation, and also that many of such employees are far more sophisticated with regard to common stock investments than in bygone years. Many of them are too young to have the "1929 stock market break psychology" which prevents many people from ever buying stock again after their sad experience in that year.

So utility managements which find that the variable idea offers valuable benefits both in employee protection against inflation and in improved employee relations, particularly among the older and better paid employees, may find the foregoing three-step procedure effective in accomplishing what would not be feasible at "one fell swoop." There is nothing sacred about the three steps. They could be changed to two, four, or five as desired. Personally, the writer believes that three should be a minimum.

No matter how a utility management may feel about the variable concept after reading this, the advantages which may be gained therefrom seem so profound and important as to warrant careful consideration and even reconsideration before abandoning the idea. The three-step procedure seems to offer a feasible approach for making the entire overall plan ultimately effective. Even if the variable plan were to stop with the top echelon group or with the secondary group, much would have been accomplished toward protecting from the ravages of future price inflation those officers and employees of the utility most needing and most desiring such protection. Such a result could not fail to bolster employee morale with respect to the one or two groups adopting the variable concept.

Crewless Train Run by Electronics

THE three-car train to be used in the New York City Transit Authority's experiment with a fully automatic subway operation has been undergoing tests in the 2,600-foot tunnel of the Times Square-to-Grand Central shuttle.

Authority officials have refused to discuss the tests, but it was learned the entire system probably would be tested.

A special roadbed and rubber-padded rails have been laid on Track 4 of the shuttle train for the operation. It was learned that some trouble had been found with the relays operating tripper switches. The trippers actuate the train's brakes if the train fails to stop normally.

Some time ago, the Transit Authority set a target date of the week of October 2nd for public tests of the system, in which the closing and opening of doors and the starting, running, and stopping of the train is done with electronic devices.

A Utility Foundation Program For Professors

By WILLIAM F. BARBER*

Nineteen gas, electric, and communications public utility companies sponsored a total of twenty-eight college professors for such a program during the summer of 1961. The author tells of the benefits he received and the benefits which he thinks sponsoring utilities can receive from such foundations for economic research and education.

It was popular not so many years ago to refer to "the ivory tower existence" of college professors. This group was felt to have set themselves aside and to have thus lost touch with reality.

Of course this belief was largely a myth; college professors, as a highly educated group, are, as a rule, extremely concerned with the problems around them. What truth might have been contained in the ivory tower myth is rapidly dissipating as college professors are becoming increasingly involved in the decisions of the immediate world.

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However, it is all too common that these men entrusted with the education of young adults do not have the opportunity to acquire a realistic knowledge of the operations of today's business. Thus, when college professors speak out on problems confronting contemporary business leaders they may do so without an awareness of the complexity of the situation. They frequently do not see all sides of the issues.

This situation can partially be corrected by exposure to realistic business operations. One of the programs that is contributing to exposure is that of the Foundation for Economic Educa-

tion, Irvington - on - the - Hudson, New York. Among its many other activities, this nonprofit association conducts a summer fellowship program in which college professors visit businesses for six-week periods, providing very necessary opportunities to view the American free enterprise system at first hand.

The fellowship is in no sense a summer job, particularly as the $800 grant, in most cases, simply defrays the extra expenses of the recipient. Also, the professor probably makes no direct economic contribution to the success of the company during this period.

DURING the summer of 1961, 19 gas, electric, and communication public utilities sponsored a total of twenty-eight college professors from 27 colleges and universities through the Foundation for Economic Education's College-Business Exchange Program. Public utilities participating included:

Columbia Gas System Service Corporation, New York, New York
Detroit Edison Company, Detroit, Michigan
Interstate Power Company, Dubuque, Iowa
Iowa-Illinois Gas & Electric Company, Davenport, Iowa
Iowa Public Service Company, Sioux City, Iowa
Mountain States Telephone & Telegraph Company, Denver, Colorado
New Jersey Bell Telephone Company, Newark, New Jersey
New York State Electric & Gas Corporation, Binghamton, New York
Niagara Mohawk Power Corporation, Syracuse, New York
Northern Illinois Gas Company, Aurora, Illinois
Northern Natural Gas Company, Omaha, Nebraska
Public Service Electric & Gas Company, Newark, New Jersey
San Diego Gas & Electric Company, San Diego, California
Southern California Edison Company, Los Angeles, California
Texas Gas Transmission Corporation, Owensboro, Kentucky
United Gas Corporation, Shreveport, Louisiana
Virginia Electric & Power Company, Richmond, Virginia
Washington Gas Light Company, Washington, D. C.
West Penn Power Company, Greensburg, Pennsylvania

In addition, thirty-one other businesses sponsored thirty-seven professors. The results of this shared experience are incalculable but important.

The Firm

THE author was fortunate to have participated in this program as a guest of the San Diego Gas & Electric Company, San Diego, California. The company is a privately owned, independent public utility serving the bulk of San Diego county and a small portion of Orange county with electric power and natural gas. It is not numbered among the nation's giant utilities, but its 1960 operating revenues exceeded $80 million and it employs almost 3,000 people. The area in which it serves has a population of approximately one million; it is one of the fastest-growing areas in the country.

San Diego Gas & Electric is an ideal

company to observe under the summer fellowship program. It is large enough to have a wide variety of activities and yet small enough that an outsider can gain some understanding of the overall company operations in a comparatively short time period. It is typical of independent utilities with its strong sense of public service and respect for the free enterprise system.

Conduct of the Program

THE author's experiences were probably similar to others on the program. The fellowship period was spent in meeting employees at all levels of responsibility, from the president on down, in questioning them as to their concepts of their job, in observing, and in working on actual projects to absorb the true flavor of empirical problem solving.

Of course, a certain portion of time was devoted to pouring over organization charts and procedures. This is necessary in order to get an overall view of company operations. However, the real worth of any company lies not in its organization charts, but in its people. A business organization is first of all a social unit; its members spend most of their active working life preserving that unit. The members tend to see their purposes in life as a partial reflection of company purposes.

Because this is true simply talking with and questioning the people that go to make up the organization was the most valuable part of the experience. In particular certain questions designed to learn reactions rather than to get specific answers were revealing. "What do you envision your job to be like five years from now?" "What is the major problem with which you contend?" "If the budget for your department were doubled, what would you do with the funds?" The answers to these and other leading questions were varied and always interesting.

CERTAINLY the physical plant of the company was included in the tour. Here it was necessary to just guess as to the possible implications of the activities occurring. For one studying business administration, the realm of generators, turbines, boilers, control panels, and switches smacks of the occult. But it would certainly be untoward to have spent

a good portion of a summer at a gas and electric utility without viewing at first-hand its production and transmission facilities, and they do help to convey a feeling of the business.

A utility is primarily a business and must be understood from that viewpoint, therefore a view of commercial activities is particularly important. Advertising and public relations, sales, accounting, customer contact, cashiering, and others were all given proper time.

In addition, opportunity was provided to participate in real problem solving situations. Extended periods were spent in dealing with limited problem areas where a set of facts needed to be gathered and interpreted and then alternative decisions analyzed. Such projects were very valuable in transmitting a feel for the business.

This could probably be considered an outline of the typical activities in which a recipient of the fellowship would engage. In general the intent is to receive a broad overall view of company operations.

Benefits

THIS program of the Foundation for Economic Education benefits the recipient, the business firms participating, and the community at large. The college professors receiving the fellowships are able to form a greater understanding and appreciation of our business society. An integral part of the teaching profession is the attempt to push back the frontiers of knowledge, to throw new light upon an area of concern. When background information has been expanded and absorbed such efforts are likely to be more successful. Thus the increased knowledge of the business world is appreciated by the professor.

In addition, the recipient feels better equipped to provide concrete examples for classroom illustration and discussion. College professors generally spend their nonscheduled time during the summer in research and study. This foundation's program admirably contributes to this activity.

The benefits to the utility or other participating business firm are possibly less direct but just as real. This enrichment of the experience of the college professor leads directly to better trained college graduates through the teaching process. These graduates, now more aware of social benefits of the business firm, have a more realistic and sympathetic attitude toward the public utility and other business organizations. This attitude, with its obvious benefits to more efficient operations, would be diffused through large segments of the population over a period of years.

ANOTHER important benefit the utility receives is the result of the self-examination process it must go through during this period. The recipient of the fellowship visits and talks with dozens of top middle management men during his stay. He is continually asking them to define and expand their remarks.

Many of these management people begin to redefine and explore their preconceived ideas of company policies under this direct examination. This may lead to an increased awareness of the nature of the problems facing the utility and a desire to do something about them.

Although the recipient of the fellow-

ship is in no sense acting as a consultant, the utility also benefits by the opinions of an educated unprejudiced outsider as to the condition of various practices in the company. Typically the professor will write a report to top management concerning his observations; in addition, his personal remarks and suggestions to many of those with whom he talks could possibly be of direct benefit.

ALSO, it would seem to be valuable for the participating college professor to become involved in at least one short project of the company while there. The extended tour, as if the company were a museum and the observer should look but not touch, really does not fulfill the intent of the program. To get a realistic impression of free enterprise in operation, it is necessary to participate actively in a real problem-solving situation. The varied experience brought to this problem by the professor should be of direct value to the company.

To paraphrase a famous remark, "What is good for the country is good for business." As our country prospers and becomes increasingly intellectually mature, our economic well-being will increase and business will thrive. The fellowship program aids in this development of a more mature knowledge of business. The benefits to the college professor are directly transmitted to students who in the very near future will become business and community leaders. Thus there are benefits to society as a whole.

Conclusions

PUBLIC knowledge of the means and ends of the business world is appallingly scant. Business and society cannot escape from the consequences of that lack, as public opinion through the democratic processes affects governmental control and regulation. Bad legislation is largely the result of ignorance and misunderstanding.

An improvement in education would seem to be thus of first priority. Business concerns, including public utilities, can aid in the process by co-operating with educational institutions and by hiring college students and instructors in temporary and semipermanent positions and in encouraging such programs as that of the Foundation for Economic Education. The resultant benefits are unlimited.

Light Bulb Durable

ALONG about 1926 Frank Dancer walked across the street from his harness shop in Independence, Kansas, and bought a light bulb—a big one, about 300 watts, he estimates.

The bulb still burns and is in use nearly every day from five minutes to four hours.

"I can't remember the year I bought it," Mr. Dancer said. "But I'd guess it was thirty-five to thirty-seven years ago.

"I used to keep expecting it to burn out. Now I'm beginning to wonder."

Reproduction Cost as a Basis for Ad Valorem Railroad Taxation

A consideration of the Interstate Commerce Commission's cost of reproduction as evidence of the market value of railroad property for purposes of ad valorem taxation. While use of ICC basic data, which are brought up to date periodically, may suggest a tool for the tax assessor, yet, in the light of inflationary conditions and subnormal railroad earnings, such methods could result in overvaluation for tax purposes.

By ROY L. LASSITER, JR.*

Ad valorem taxation of public utilities poses significant problems in establishing the value of these properties and in maintaining equity between this and other classes of real property.

The statutes of most states provide that real property is to be assessed at "full value," "full cash value," "fair value," etc. These and similar terms have usually been interpreted as the price which would have been set in a transfer between informed buyers and sellers, acting voluntarily, and bargaining "at arm's length."[1] The fact that entire public utility properties are rarely sold does not alter legal intent, but rather forces estimation of market values. The procedures used to estimate market value must be consistent with the principle: "Determine the actual commercial worth of the property; that is, what it would command in the market. And such must be the objective if railroads and public utilities are to be treated like other property."[2]

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The purpose of this article is to evaluate ICC cost of reproduction as

evidence of the market value of railroad operating property and to establish the impact on the railroads of the apparent widespread use of this cost as an evidence of value for ad valorem tax purposes.[3] The analysis does not attempt to deal with the problems of allocating the value of railroad property between taxing jurisdictions, equalization of assessment ratios after market values have been estimated, or to evaluate the other two major evidences of value, capitalized earnings and market value of stocks and debt. Neither is reproduction cost evaluated as to its applicability as a rate base. The chief concern is with ICC reproduction cost and its relevancy to the market value of entire railway systems as units.

The importance of the appropriate choice of evidence of market value is illustrated in the findings of an Association of American Railroads study which stated "that $141,187,824 in excess taxes was exacted from the railroads in 1957 in 31 states solely because railroad property was assessed and valued higher than other property that was subject to the same tax rates."[4]

ICC Cost of Reproduction

BASICALLY, ICC reproduction cost represents the cost of reproducing the existing property at current prices.[5] The basic data were determined under the provisions of the Valuation Act of 1913 and this cost was established as of the valuation data in terms of 1914 prices by the Bureau of Accounts of the Interstate Commerce Commission. The bureau adjusts its data primarily on the basis of information reported by the railroads regarding additions, replacements, and retirements, and reports cost in terms of current price levels. The data reported by the bureau are: cost of reproduction new, and cost of reproduction less depreciation, both excepting land and rights; original cost, except land and rights; present value of land rights; and working capital, including material and supplies.[6]

The major item considered here is cost of reproduction less depreciation and plus the present value of land and rights, since this combination is most widely used to estimate the value of operating property for ad valorem tax purposes. This combination will be referred to hereafter as net reproduction cost.

Evaluation of ICC Cost of Reproduction As Evidence of Market Value

THE market value of a group of assets is the discounted future earnings which these assets can produce. Market value changes as expected future earnings change and is directly related to changing economic conditions, physical deterioration of the assets, and, in substantial part, reflects the ability of management to produce income from the assets. Thus, any approximation of market value for tax purposes must be directly related to the earnings which the property can reasonably be expected to generate in the future.

The earnings of all class I railroads in the post World War II period are indicative of their changing economic status. Since World War II the net railway operating income of these railroads has not increased, although there have been year-to-year fluctuations. (Table I, page 669.) Significantly, net railway operating income has declined steadily since 1955. As a group the railroads have not participated in the postwar prosperity and, in fact, have lost relatively as in-

creasing competition from other modes of transportation has developed.

CONTRARIWISE, the net reproduction cost of these railroads has increased rapidly as inflation has contributed to the increasing cost of reproducing operating properties. Between 1946 and the end of 1959 the net reproduction cost of the class I railroads increased by $25.8 billion. (Again see Table I.) This amounts to a compound rate of increase of 8 per cent per year. During the same period net property investment increased by only $5.8 billion, which would indicate that most of the increase in net reproduction cost was attributable to price level changes.

When net railway operating income of all class I railroads is expressed as a per cent of net reproduction costs, this rate of return has not been as high as 4 per cent in the postwar period, and for most of the years has been below 3 per cent. (Again see Table I.) It should be emphasized that these data do not indicate net returns on operating property since net railway operating income is determined *before* fixed interest charges are deducted. Net returns on operating property would be appreciably lower if adjusted for fixed interest charges.

SINCE the data utilized so far have been for all class I railroads, it might be argued that they are not necessarily indicative of the validity of reproduction cost as evidence of value for some of the more profitable roads. However, the data for 1959 (the latest year for which informa-

TABLE I

NET RAILWAY OPERATING INCOME, NET REPRODUCTION COST, NET PROPERTY INVESTMENT, AND RATES OF RETURN ON NET REPRODUCTION COST AND NET PROPERTY INVESTMENT FOR THE CLASS I RAILROADS IN THE UNITED STATES, 1946-59

Year	*Net Railway Operating Income (Millions of Dollars)*	*Net Reproduction Cost*[1] *(Millions of Dollars)*	*Net Property Investment (Millions of Dollars)*	*Rate of Return on Net Reproduction Cost (Per Cent)*	*Rate of Return on Net Property Investments*[2] *(Per Cent)*
1946	$ 620.1	$22,588.7	$22,549.0	2.75	2.75
1947	780.7	25,038.9	22,891.2	3.12	3.44
1948	1,002.0	25,444.2	23,624.4	3.94	4.31
1949	685.6	26,611.7	24,028.4	2.58	2.88
1950	1,039.7	29,038.7	24,591.9	3.58	4.28
1951	942.5	32,000.0	25,518.5	2.95	3.76
1952	1,078.2	32,465.2	26,262.8	3.32	4.16
1953	1,109.4	36,230.6	26,670.5	3.06	4.19
1954	874.0	36,663.8	26,670.4	2.38	3.28
1955	1,128.0	39,868.4	26,851.3	2.83	4.22
1956	1,068.2	44,197.6	27,235.9	2.42	3.95
1957	922.3	46,556.4	27,688.0	1.98	3.36
1958	762.3	47,625.9	27,537.6	1.60	2.76
1959	747.6	48,372.7	27,430.8	1.55	2.22

[1] End of year. Comprised of reproduction cost, less depreciation, plus the present value of land and rights.

[2] Rate of return on average of beginning and ending of year investment.

Source: Railroad Transportation, Washington: Association of American Railroads, December, 1960; and *Elements of Value of Class I Line Haul Railroads,* Washington: Interstate Commerce Commission, 1946-60.

tion is available) indicate that for five roads, which are generally recognized as relatively profitable, the average rate of return amounted to only 2.9 per cent on net reproduction costs (Table II, page 671). The highest rate of return in the year was for the Chesapeake & Ohio and this return was less than 4 per cent.

If net reproduction costs for all class I railroads are projected on the basis of the rate of increase experienced in the postwar period, this cost would amount to $487 billion by the end of 1989. (Table III, page 671.) If only one-half this rate of increase actually takes place the net reproduction cost would amount to $157 billion in the same year and would be three times as great as this cost in 1959. It should be emphasized that these increases can take place *independently* of the direction in which the earnings of the properties move.

THE characteristics of net reproduction cost as evidence of market value have been discussed by others. For example, Professor Martin stated:

> For one thing the estimation of reproduction cost and of depreciation is a difficult and expensive undertaking subject to substantial error. Someone has said bluntly, "It is easier to accurately estimate the market value of a railroad than accurately to estimate its reproduction cost after depreciation" . . . For a second thing, even if the reproduction cost minus depreciation were accurately known, it would scarcely be relevant evidence of the current market value of a monopolistic property, mostly in the nature of "sunk investments," which is geographically dispersed, which is made up of parts having widely varying ages, and which operates as one whole.[7]

The U. S. court of appeals found:

> No doubt, historical cost and reproduction cost less depreciation as determined by the Interstate Commerce Commission would be of help in determining value if one knew or could find out how much to discount such figures for permanent impairment of the value of the systems due to highway or other forms of competition and other changed conditions which have apparently come to stay. . . . Without knowing what portions of the system actually justify their present-day existence, the cost of reproducing the entire system, or value . . . An estimate of value in excess of the amount upon which, it can honestly be believed, the property is capable of earning an acceptable rate of return, cannot be sustained.[8]

The Interstate Commerce Commission stated:

> Inflationary processes are and have been so strong that it is clear that estimates of cost of present-day reproduction, while useful in measuring inflationary forces, need not be given controlling consideration in estimating value of public service property for rate-making purposes. No prudent man would consider reproducing the properties on the basis of the extremely high reproduction costs estimated.[9]

THE Special Study Group on Transportation Policies in the United States indicated:

> Cost as evidence of value: Cost,

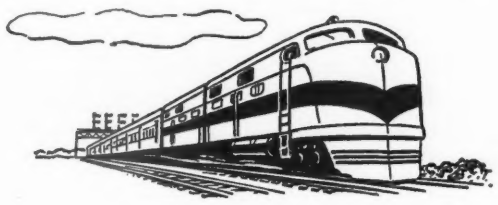


TABLE II
NET REPRODUCTION COST AND NET RAILWAY OPERATING INCOME OF SELECTED CLASS I RAILROADS IN 1959

Railroad	*Net Reproduction Cost*	*Net Railway Operating Income*	*Rate of Return On Net Reproduction Cost (Per Cent)*
Atchison, Topeka & Santa Fe	$2,520,062,000	$159,557,000	2.36
Chesapeake & Ohio	1,582,901,000	59,940,000	3.79
Great Northern	1,268,426,000	24,210,000	1.91
Norfolk & Western .	1,426,072,000	53,687,000	3.76
Seaboard Airline ..	712,769,000	19,078,000	2.68
All Five Roads	$7,510,230,000	$316,472,000	2.88

Source: Elements of Value of Class I Line Haul Railroads, Washington: Interstate Commerce Commission, November 4, 1960; and Moody's *Transportation Manual,* 1960.

whether it be original cost or reproduction cost, is poor evidence of system value for railroads.[10]

The Board of Investigation and Research stated:

It should be clear from the preceding discussion of cost as an evidence of value that state property tax laws do not contemplate assessed valuations which are equal to, or bear any uniform relation to reproduction cost less depreciation.[11]

Conclusions

BASED on the preceding discussion the following inferences may be drawn:

1. The rates of returns on net reproduction costs in the postwar period indicate that the class I railroad systems in

TABLE III
PROJECTED NET REPRODUCTION COSTS OF THE CLASS I RAILROADS FOR THE YEARS 1969, 1979, AND 1989

Year	*Net Reproduction Cost @ 8% Rate Of Increase*	*Net Reproduction Cost @ 4% Rate Of Increase*
1959	$ 48,372,700,000 (actual)	$ 48,372,700,000 (actual)
1969	104,433,000,000	71,603,400,000
1979	225,463,100,000	105,990,500,000
1989	486,757,900,000	156,891,900,000

the United States would not be reproduced and thus present net reproduction costs do not bear a relationship to market value. This conclusion also is generally applicable to the more profitable operations.

2. Astute management may have some ability to influence the earnings of railroad properties. However, management's ability to control reproduction cost is limited to its ability to increase the investment in operating property, which is not likely in the face of declining earnings, or to destroy or abandon property. The last alternative is not open since public utilities are required to provide service and rarely do the regulatory agencies grant permission to abandon. Management has little or no control over the major determinant of reproduction cost; *i. e.*, the general price level.

3. As inflation increases reproduction cost, the use of this cost as an important evidence of value contributes to confiscatory taxation, unless earnings increase with the cost of reproducing the property. The declining demand for rail transportation, resulting from increased competition from other carriers, has prevented and will continue to prevent a rate structure which would yield a "fair rate of return" on reproduction cost.

4. The lack of direct relationship between the earning power of the property and reproduction cost makes extensive reliance on reproduction cost as evidence of value of railroad properties for ad valorem tax purposes inconsistent with the willing buyer-willing seller concept of value, and thus violates the intent of state property tax laws and results in discriminatory overvaluation of railroad operating property.

5. The choice of evidences of value is as significant in the process of achieving equity in taxation as equalizing assessments after value has been established. Overvaluation can be fully as discriminatory as unequalized assessment.

Footnotes

[1] Board of Investigation and Research, *Carrier Taxation*, Washington: U. S. Government Printing Office, House Document No. 160, 79th Congress, 1st Session, p. 102.

[2] *Public Finance*, by M. S. Kendrick, Boston; Houghton Mifflin, 1951, p. 242.

[3] The extent of use of reproduction costs as evidence of value is indicated in, Committee on Unit Valuation, *Appraisal of Railroad and Other Public Utility Property for Ad Valorem Tax Purposes*, Chicago: Federation of Tax Administrators, June, 1954, pp. 59, 60, and Special Study Group on Transportation Policies in the United States, *National Transportation Policy*, Washington: U. S. Government Printing Office, committee print, 87th Congress, 1st Session, p. 479.

[4] Magna Carta for Transportation, Washington: Association of American Railroads, p. 48.

[5] For an extensive discussion of the methods employed in determining ICC reproduction cost see Committee on Unit Valuation, *op. cit.*, pp. 54-59, and Bureau of Accounts, *Elements of Value of Profits, Class I Line Haul Railways*, Washington: Interstate Commerce Commission, November 4, 1960.

[6] Bureau of Accounts, *op. cit.*

[7] "Marshaling the Evidence of the Value of Public Utility Property," by J. W. Martin, *Proceedings of the National Tax Association*, 1955, p. 111.

[8] Bailey N. Megan, 102 F2d 651, 655. Quoted from *Proceedings of the National Tax Association*, 1957, pp. 467, 468.

[9] Increased Freight Rates, 1951, 284 ICC 589, 608. Quoted from *Proceedings of the National Tax Association*, 1957, p. 467.

[10] Special Study Group on Transportation Policies in the United States, *op. cit.*, p. 478.

[11] Board of Investigation and Research, *op. cit.*, p. 115.

OUT OF THE MAILBAG

The Problem of Fractional Shares

An article in your April 27th number, "Some Answers to the Question of Stock Dividends" by Mr. W. F. Stanley, suggests a sale of grouped stock dividends through investment bankers. It is difficult to see how this will maintain ". . . the nontaxability of the stock dividends . . ." While such sales have the advantage of being treated as capital gains, the tax is imposed irrespective of the method of sale.

The problem of handling fractional shares received as dividends has already been solved by many companies, but seldom by conversion into cash by the issuer. Standard Oil of Indiana does it this way (the stock distributed is that of another company) but American Electric Power, Dow Chemical, Franklin National Bank, and Monsanto Chemical, to name a few, send out a combination certificate and order blank, which, when signed and returned to a designated agency, results in purchase to make a full share or sale for cash. Buy and sell orders are matched, resulting in dealings close to the market.

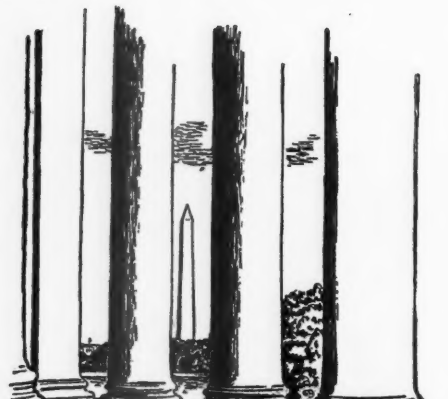
Mr. Stanley's remarks are unfavorable to stock dividends for small investors, but evidence mounts that they *are* popular, else the companies distributing them would hardly be increasing as they have in recent years. Monsanto polled their stockholders on the subject, received a favorable response and therefore continued the practice. Not mentioned by Mr. Stanley is the experience of Citizens Utilities after starting stock dividends. For some time the two classes of stock sold on about the same basis, but before long the "A" stock (dividends in stock) pulled ahead. Shortly after the above article appeared the "A" stock was 22½ bid while the "B" stock (60 cents cash dividend) was 19¼. Today the bid prices are 29½ and 28¼, respectively.

For years Commonwealth Edison, a staid and conservative dividend payer, sold at an average price-earnings ratio of 15. Since stock dividends were initiated three years ago, the ratio has increased to 20, based on average price of the first eight months of 1961 and twelve months' earnings of $3.89. Based on the current price of 94 the price-earnings ratio is 24. The rising price trend probably results to some extent in a rising list of stockholders.

Something similar to the suggestion of Mr. Stanley was tried by the Franklin National Bank. Arrangements were made for stockholders to sell full shares received as stock dividends, up to ten in number (as well as fractional shares) at a fixed price through a broker, but without a commission. There was little use made of this service and it was soon discontinued.

While not conclusive, the above examples offer rather strong evidence of the popularity of stock dividends, perhaps even among small investors.

—L. C. Peterman,
Consulting engineer,
Ford, Bacon & Davis, Inc.,
New York, New York.



Washington and the Utilities

AGA Backs FPC Area Price Policy

SUPPORT for the Federal Power Commission's area pricing formula for natural gas, reaffirmed recently by the commission's new chairman, Joseph C. Swidler, came this month from L. T. Potter, outgoing president of the American Gas Association. (See, also, page 705.)

The AGA's backing of the area pricing system was contained in Potter's speech before the association's annual convention at Dallas, Texas, early in October.

He called the FPC's area pricing pattern for natural gas a "masterful effort to establish something workable in the regulation of field prices for gas." Potter also said that the commission's policy declaration on area pricing was the only one yet suggested which had "any semblance of rationality."

The convention also heard several speakers, including W. M. Elmer, president of the Texas Gas Transmission Corporation of Owensboro, Kentucky, and William G. Hamilton, Jr., president of the Gas Appliance Manufacturers Association, and the American Meter Company of Philadelphia, call for intraindustry co-operation and unity in order to ward off serious financial setbacks.

Potter's statement was the first from a prominent gas industry spokesman since Swidler reaffirmed the FPC's area pricing formula, first initiated last year under Chairman Jerome K. Kuykendall. Under FPC policy, a price pattern will be established for each producing area. This will reduce individual hearings in establishing rates. Previously, court decisions had insisted that the commission use a utility-type rate-base cost-of-service formula in setting a field price for each producer.

THE AGA president, also the president of the Lone Star Gas Company of Dallas, noted that the implementation of the new FPC formula was being hampered by sniping at certain details of the policy. In a plea for co-operation, he asked the industry to forgo attacks upon detail and accept the principle of the FPC system. Potter said that these attacks are in direct contrast to a trend among the three segments of the industry—distributors, pipeline companies, and producers—to achieve greater understanding.

Potter stated that if the objections in

detail being offered by some groups in the gas industry to the establishment of the area pricing principle should result in making further natural gas regulation progress impossible, the industry may find itself facing an uncertain future. He hoped the industry "will exercise statesmanship" to the extent of sustaining "what ought to be an acceptable principle" instead of attacking it in detail.

Hamilton, in his talk, said that in the past industry progress had come about because all three segments of the industry moved forward together, and because of a pooling of money, efforts, and talents. Only through the continuation of this policy would the gas industry remain strong, he said.

Elmer also stressed the importance of intraindustry understanding in order for the gas industry to retain the continued support of its customers, suppliers, and the investing public. One of the priority projects of the industry, he said, was to establish price stability of natural gas. All segments of the industry should work more closely with the regulatory agencies to achieve this objective, it was pointed out.

Northeast Airlines Merger Now Uncertain

EARLY in October, Washington sounding boards predicted that a Northeast Airline merger with Mohawk Airlines was only a matter of time, primarily because of Northeast's unsteady financial position.

However, these predictions were rendered uncertain by what seemed to be a new effort by the faltering airline's chief stockholders — Atlas Corporation and Hughes Tool Company—to save Northeast by injecting into its bloodstream a strong dose of that cure-all — money.

Atlas, an investment company, controls Northeast through ownership of about 55 per cent of the airline's stock. Hughes Tool, on the other hand, which owns about 10 per cent of Atlas' stock, is controlled by financier Howard Hughes.

At the end of September, Hughes Tool, Atlas, and Northeast filed with the Civil Aeronautics Board for approval a confidential "memorandum of understanding" which was apparently a plan for providing financial aid to the airline. The three companies asked the CAB to withhold the document from public disclosure. The board put it under lock and key, but then changed its mind and announced the document would be made available to the public and the press because "disclosure is required in the interest of the public."

It was at this time that all sorts of rumors were flying concerning the merger of Northeast with Mohawk. Under the proposal, Mohawk would have taken over Northeast's New England network, and Eastern and National airlines would have assumed Northeast's Florida routes. In return Northeast would have received a combination of common stock, stock purchase warrants, and notes for its assets from Mohawk, Eastern, and National.

SHORTLY after the CAB said it was going to make public the Atlas-Hughes Tool-Northeast document, the three concerns requested withdrawal of their application for approval of the agreement and erasure of the document from the board's records. After a consultation, the CAB announced it was permitting the withdrawal of the application but was hanging on to the document itself. The CAB did not say whether it would permanently keep the application under wraps, but left the way open to make it public later by refusing to go along with

the request to physically erase the memorandum from the CAB's records.

Naturally, there was never any official disclosure of what the plan contained, except that a plan to financially aid Northeast seems logical. Neither was there any explanation from Northeast, Hughes Tool, Atlas, or the CAB why the companies considered secrecy of their agreement so important. But the CAB did say when it promised to make the document public that the three feared its disclosure "may adversely affect" their interests.

The Hughes and Atlas offer, whatever it might have been, was prompted by an investigation the CAB opened in June into merger and other prospects for Northeast. The CAB said that the line's "present and future financial positions are of particular concern to the board." The investigation produced no recommendation, and no other results than the Mohawk-Eastern-National offer. Should Northeast accept the offer, it would still be subject to CAB approval.

THE CAB has indicated that it regards a merger as the best solution to Northeast's financial difficulties. Despite the addition of a Florida route a few years ago, the company has not been able to show an operating profit since 1956. Northeast's service to Florida has been criticized by Eastern and National on the ground there is not sufficient passenger traffic to support three lines on that route.

Northeast in 1960 had a loss of $10.8 million on sales of $38.9 million; it had a deficit of $2.8 million for the first half of 1961. Its June 30th balance sheet showed current liabilities $8.8 million larger than current assets. The line also owes substantial sums to Atlas and Hughes Tool. It had $26 million of subordinated debt outstanding besides $7.8 million of equipment obligations on June 30th.

Earlier this year, Northeast had tried to interest Trans World Airlines into acquiring Northeast through merger, but TWA rejected this proposal.

Plan New Natural Gas Pipeline

THE FPC has received an application for a certificate of approval from the Transcontinental Gas Pipe Line Corporation (Transco) which, if approved, would result in the construction of a 188-mile transcontinental gas pipeline stretching from Mississippi to Pennsylvania.

The overall $49 million expansion program to be undertaken by the concern is designed to increase gas deliveries by 93 million cubic feet per day to 32 existing natural gas resale customers (distributors) in nine states.

The new 36-inch, 188-mile pipeline is the largest single part of the proposed program. It would be laid parallel to the existing system in Louisiana, Mississippi, Alabama, Georgia, the Carolinas, Virginia, Maryland, and Pennsylvania.

Transco also plans to install an additional 46,800 compression horsepower at 13 compressor stations in seven states. Other construction detailed in the application included 28 miles of 24-inch and 20-inch gathering laterals in Louisiana, metering and regulating facilities in Bucks county, Pennsylvania, and new compressors in Texas.

Transco, a $700 million transmission company, is the major supplier of natural gas to the New York city-New Jersey-Philadelphia metropolitan areas.

Washington Transit Agency to Start Program

PRESIDENT Kennedy signed into law legislation which will enable the Na-

tional Capital Transportation Agency to carry out the first part of its program to establish a modern mass transit system for the nation's capital, despite a sharp decrease in its expected appropriation from the Congress.

Hopes for more speedy action by the agency were slightly dampened during the final days of the first session when the Congress cut by more than half the funds which will allow the group to start initial work on the transit network. The NCTA was allotted $2.5 million in the supplemental appropriations bill as first passed by the Senate, but a joint House-Senate conference report as finally approved by both houses of Congress cut the amount to $1 million.

The money is designated to purchase mass transit rights of way, stations, and parking lots along principal arteries in outlying suburban areas of Virginia and Maryland leading to Washington.

THE bill (S 2397), signed into law by the President, allows the NCTA to carry out "Part I" of its transit development program by providing authorization for "acquisition . . . of land for future express transit service in conjunction with the development of certain new highways and parkways in the national capital region."

The agency has said it will go ahead with all its Part I projects, but at a slower pace because of the money cut by Congress.

Electric and Coal Statistics Released

FIGURES which predict an increased use of coal, and others which show a jump in the cost of electricity, have been made public by the Bureau of Mines and Federal Power Commission, respectively.

Coal demand should reach 670 million tons a year in the United States by 1975 as compared with the 1960 production figure of 434 million tons.

Most of the expected increase in coal demand, the bureau says, will result from projected expansion of electric power generation by both investor-owned and government power utilities. Coal is slated to provide the largest share of energy for an annual output of 1,772 billion kilowatt-hours of electricity estimated for 1975. The amount of coal used for power generation alone in 1975 may exceed last year's total production.

The coal industry must contend with serious problems for some time to come, the bureau believed, but added that it can also expect larger markets as the nation's energy needs expand.

FPC statistics showed that the average monthly residential electric bill jumped by one to two cents during 1960. The report showed that the average monthly bill for 250 kilowatt-hours of residential electric service at the beginning of the year was $7.45, compared with $7.44 a year earlier, and $7.36 as of January, 1959. The average monthly bill for 100 kilowatt-hours also increased by one cent during the year, from $4.04 to $4.05. The average bill for 500 kilowatt-hours was $10.65 last January 1st, compared with $10.62 a year earlier. The average residential consumer was using 317 kilowatt-hours per month as of January, 1961.

Commercial electric service bills, on the other hand, showed a slight decrease during 1960. The average bill for 6,000 kilowatt-hours was $164.11 at the start of this year, down from $165.12 recorded twelve months earlier.

Telephone and Telegraph

Presidential Advisers Endorse "Project West Ford"

A SPECIAL panel of the President's Science Advisory Committee has advised astronauts and astronomers that they have nothing to fear from the Air Force's communications "Project West Ford." It is the Air Force's plan to fire 350 million copper filaments, weighing a total of 75 pounds, into a circular polar orbit about 2,360 miles above the earth. The purpose of the project will be to test a new system for long-range radio communications.

The tiny copper hairs will act as reflectors of microwaves transmitted from ground stations. Such a system would function in a similar way to the passive satellite Echo I.

A great deal of controversy has arisen over "Project West Ford" despite an assurance on August 11th by the National Aeronautics and Space Council that only one such test would take place until the results could be fully analyzed and evaluated.

The Space Science Board of the National Academy of Sciences has also given its blessing to the experiment.

A number of other scientists have objected to the project on the ground that the little hairs might interfere with both light and radio waves in space, thus hurting both optical and radio astronomy. It has also been suggested that the copper hairs might act as micrometeoroids to the detriment of spacecraft and space travelers.

THE Soviet Union has even gotten into the act with a protest letter from the Soviet Academy of Sciences to D. W. Bronk, president of the United States National Academy of Sciences. The Russian note stated that "Project West Ford" may possibly have "dangerous consequences to artificial satellites on earth, especially those with a man on board." The Russians also fear that the project might "become a precedent for more extensive experiments of a similar kind which will result in serious contamination of near terrestrial space." The Russian's concern over the possible contamination of space seems strange to a good many observers since the same concern evidently does not extend into the field of the testing of atomic bombs. At this present writing, eighteen such blasts have been set off by the U. S. S. R. in its present series of tests.

The President's special panel stated on October 5th that the experiment would not impair ability to make scientific ob-

servations. It also concluded that the experiment would not pose any additional hazard to manned space flights. It admitted, however, that orbiting astronomical telescopes might have to avoid observations through the belt but it stated that one way to avoid this would be to put the satellite in orbit above the belt of copper wires.

Two scientists of the Lincoln Laboratory of the Massachusetts Institute of Technology, Irwin I. Shapiro and Harrison M. Jones, have estimated that the average lifetime of the filaments will be seven years. They believe that the feeble pressure of sunlight will gradually push the hairs down closer to the atmosphere where they will be destroyed. This calculation is based on the assumption that the launch will be made about the time of the winter solstice, December 21st. It is understood that the Air Force hopes to launch "Project West Ford" before that date if it is at all possible.

HEW Bans Telephone Monitoring

The Department of Health, Education, and Welfare has issued a directive designed to stop the monitoring of telephone conversations in that department. The directive, which was issued by Secretary Abraham A. Ribicoff, specified that when any sort of third-party listening in is deemed necessary, both parties to the conversation should be advised.

Earlier, the House Government Operations Committee took a broad swipe at the department when it was asserted that HEW had more known listening-in facilities than any of the other 37 agencies covered by the committee's study. The House committee stated that

> When monitoring is done secretly and becomes eavesdropping, the bureaucracy is sacrificing principle to the altar of efficiency. No matter what the excuse, there is something mean and unprincipled in a government official's arranging for a secretary or a transcribing machine to eavesdrop on telephone calls.

Secretary Ribicoff did not ban all monitoring since he took note in his directive that the occasion might arise when it would be necessary to have a secretary pick up an extension telephone to transcribe accurately address, dates, and such material that might be mentioned in a telephone conversation. However, when this is done all parties on the line should be so advised.

The directive stated:

> . . . I see no need to incur added expense for special "gadgets" to facilitate regular monitoring. Hereafter no such "listening in" or monitoring shall be permitted without the knowledge of all parties to the conversation. All telephone devices which are currently in use to facilitate such monitoring shall be taken out or disconnected and no further ones shall be installed.

In its statement on telephone monitoring, the House committee did not condemn all telephone monitoring but suggested that when there was a valid reason for such activities they should be carried out only under clearly written guide lines.

Underwater Telephone System Produced for the Navy

Gulton Industries of Metuchen, New Jersey, has delivered a new underwater telephone system to the Navy's Bureau of Ships. The system basically consists of a transducer which acts as a two-way microphone in sending or receiv-

ing; a receiver-transmitter; and a control box. When a ship's Captain speaks into a telephone his voice is converted by the transducer into a sound wave which is beamed underwater. At the receiving end the sound wave is converted back into an electrical signal which is heard by the listener over a conventional telephone receiver or a speaker.

More than 148 of these sonar telephone systems have been delivered as part of an order in excess of $400,000. The sonar system enables surface or submarine vessels to talk to one another, forming another vital link in our defense communications system.

Inflated Dome Protects Bell's Space Antenna

THE Bell system's space communication center near Andover, Maine, now boasts the world's largest inflated earthbound structure. The huge nylon dome is 210 feet across and 160 feet high and forms a temporary cover within which technicians will assemble a 300-ton steel and aluminum antenna for future experiments in outer space. The dome weighs about 12 tons and is approximately .050 inches thick and is supported by internal air pressure. At the end of December this temporary dome will be replaced with one which is practically transparent to radio waves.

The construction near Andover will be a vital link in the Bell system's "Telstar" space communications experiments. Project "Telstar" will involve the launching of two active communications satellites. It is expected that the first of these will be launched in April. The "Telstar" satellites will be launched from Cape Canaveral by the National Aeronautics and Space Administration, with the Bell system paying all expenses.

In addition to testing transmission characteristics of satellites, the experiments will also check the performance of facilities being developed to point ground antennas and for tracking stations. The satellites will be thrown into an elliptical orbit ranging from 1,000 miles at the nearest point to about 3,000 miles at the furthest from the earth.

ONCE the "Telstar" satellites are in orbit they are expected to gather much information that will be of value when a space communications system becomes a commercial reality. These satellites will have a comparatively short life but they will measure the effects of radiation and temperature on various components. In addition they will test protective measures being taken, such as sheets of sapphire to shield solar cells. When the permanent satellite system is launched it is anticipated that the relay stations will stay in orbit for ten years or more.

In these experiments the Bell system will assume all of the financial obligations. Bell will furnish all of the satellites and the ground station facilities and it will reimburse the NASA for rockets as well as for launching, tracking, and other expenses. These "Telstar" tests are of great importance since much that is learned through them will be of benefit when the permanent system is put into orbit.

The importance of establishing a satellite communications system can be understood when it is realized that about 4 million overseas telephone calls were placed last year and it is expected that the volume of such calls will increase 20 per cent annually.

Financial News and Comment

By OWEN ELY

Chairman Swidler Confirms FPC Use of "Area Prices"

BASED on his recent address before the Independent Natural Gas Association meeting at Houston, FPC Chairman Joseph C. Swidler's views regarding the commission's problems and policies may be summarized as follows:

Hundreds of separate cases have now been consolidated into the "area rate proceedings." While the report of Chief Examiner Marsh in the recent Southern Louisiana proceedings has raised a question as to whether such proceedings will be useful rate-making devices, Mr. Swidler's own view is that they will prove to be the most important single tool for developing a sound framework for producer rate regulation. He said:

> I do not believe the production of natural gas lends itself readily to an individual well-by-well or even company-by-company cost-of-service and rate of return approach. . . . We cannot expect (the independent producer) to continue risking his money exploring for gas at the pace which the national interest requires without offering hope of something more than a return on the money expended at the level which is usual for the largely risk-free investments in conventional utility enterprises.

He stated that the two area proceedings covering the large production areas of the Permian basin and southern Louisiana can be expedited by commission orders, which should indicate whether the purpose is to provide "a floor, a ceiling, or a norm for gas sold within the respective areas." It will be necessary to "put ground rules into effect" and the commission hopes to have most of the answers in the near future.

THE major parties to the current proceeding in Louisiana have been ordered to complete a questionnaire on costs, and analysis of these returns should give the commission data on the overall cost of producing gas within the area. This study of course involves allocations of costs between oil and gas, etc. Area

DEPARTMENT INDEX

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prices will be set as ceilings, not as floors, though there might be some limited exceptions. Mr. Swidler does not believe that costs plus a 6 per cent utility return should constitute the limit of price, since there must also be an incentive factor. Fixing area prices based on area-wide costs and conditions would allow the more efficient company to reap the benefits of efficiency, but the less efficient companies should not be given higher rates — otherwise we would have to have individual determinations on a cost basis, which does not conform well to the structure or economics of the gas industry.

CHAIRMAN Swidler reassured the industry regarding the commission's efforts to expedite its work. Important cases are to be scheduled on a day-to-day basis so that the commissioners will know where lags are occurring. Companies filing for a price increase should present their case *in full* initially. He stated:

> By requiring that your cases be fully prepared in advance of filing, that our staff streamline its field investigations, and that interveners with a common interest pool their efforts, by handing down clear precedents so that settled issues need not be relitigated, by obtaining additional commission personnel to handle our case load, and by setting cases for prompt hearing, we hope to have a fighting chance of deciding cases within the five-month suspension period. That is our immediate goal as to pipeline cases and our ultimate goal as to producer cases once the initial area rate cases provide the ground rules. We shall make every effort to clean up our backlog of cases and try new cases expeditiously.

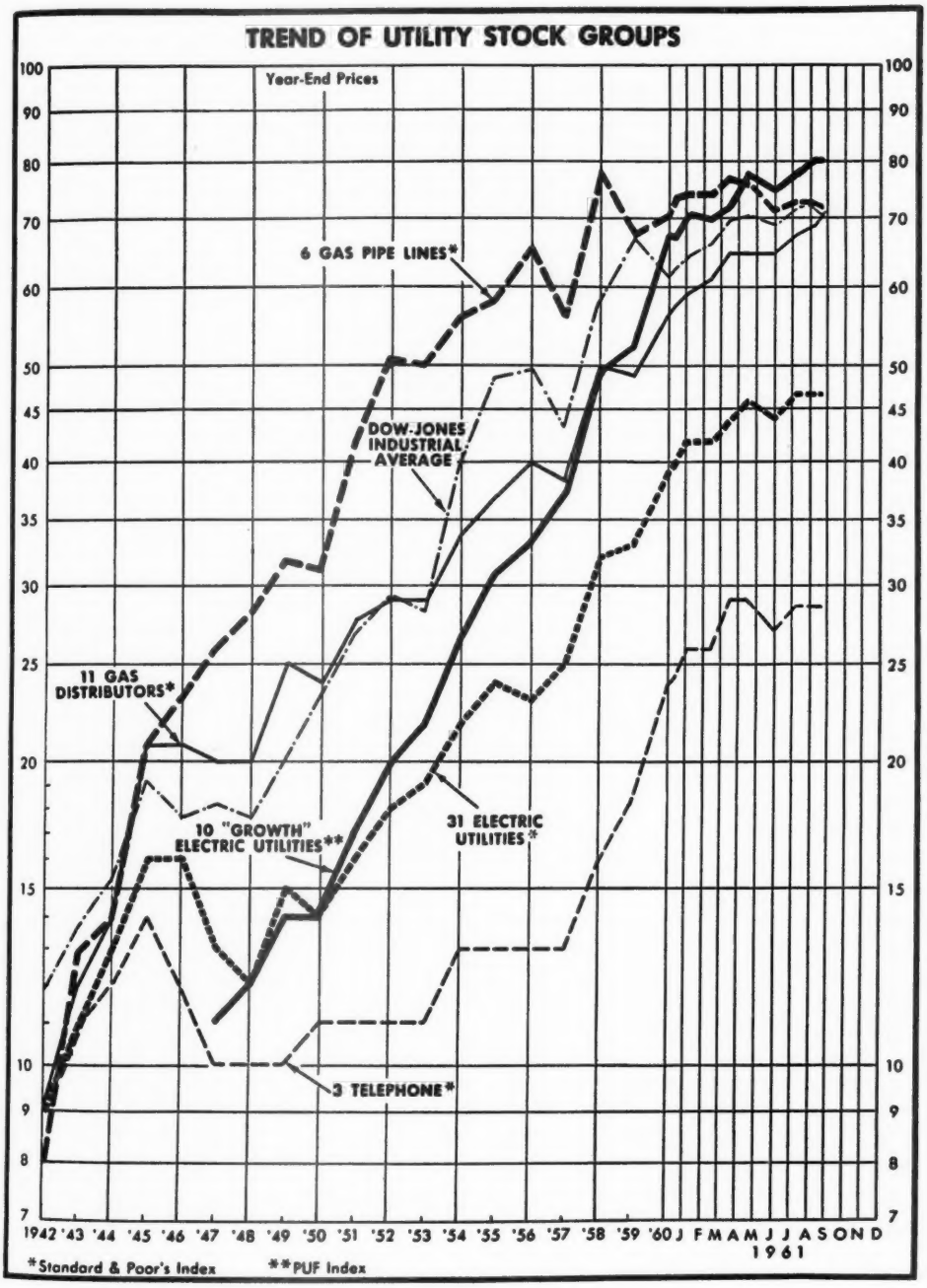
Mr. Swidler also was hopeful that delays occasioned by judicial review could be minimized in future by co-operation between the commission and the industry, with less intervention by third parties.

PRESIDENT L. T. Potter, in the opening session of the AGA annual convention (which convened a few days after the INGAA convention), referred to the Federal Power Commission's new area pricing pattern as a "masterful effort to establish something workable in the regulation of field prices for gas." He said that he hoped that in due course the industry would exercise enough statesmanship to forgo attacks upon detail, and to accept the principle of the FPC formula. However, he felt that it should be embodied in new legislation to give it greater validity.

Backing Mr. Potter, AGA directors approved a resolution supporting HR 7575, the so-called "new Harris Bill," named after Representative Oren D. Harris, Democrat of Arkansas. The bill would set criteria for area pricing based on a commodity value formula rather than a cost-of-service formula. However, it was suggested that a section of the bill be deleted which would make difficult the filing of an application for rate relief by a natural gas company while it still had pending a previous application.

Danger of FPC Use of "10 to 10½ Per Cent Return on Equity" as a Rate Yardstick

IN a talk before the Independent Natural Gas Association convention at Houston, Gene M. Woodfin, partner of Carl M. Loeb, Rhoades & Company, stressed the magnitude of the problems faced by the natural gas industry in financing a $29 billion expansion program over the coming decade. He stated:


TREND OF UTILITY STOCK GROUPS
Year-End Prices
6 GAS PIPE LINES*
DOW-JONES INDUSTRIAL AVERAGE
11 GAS DISTRIBUTORS*
10 "GROWTH" ELECTRIC UTILITIES**
31 ELECTRIC UTILITIES*
3 TELEPHONE*
100
90
80
70
60
50
45
40
35
30
25
20
15
10
9
8
7
1942 '43 '44 '45 '46 '47 '48 '49 '50 '51 '52 '53 '54 '55 '56 '57 '58 '59 '60 J F M A M J J A S O N D
1961
*Standard & Poor's Index
**PUF Index

It is generally recognized that the position of the industry in the capital markets of today is materially different from that which existed in 1954 at the time of the Phillips decision. The primary cause for the difference is the uncertainty surrounding the industry and its future—resulting out of regulatory chaos and a hostile climate in the Congress and the courts. The sophisticated investor in equities saw the approach of this period of uncertainty and reduced his equity holdings. Institutions with large amounts of senior securities were powerless to move and the average investor continued to live in the euphoria of past growth. Disenchantment really arrived, however, after the commission in 1960 seemed to abandon its prior method of determining a fair return and turned again to a strict "cost of money" concept of a rate return, *with the further limitation, however, of a 10 to 10½ per cent return on the common equity of the pipeline companies.* After this action came full investor realization that all was not well.

In earlier years, he pointed out, investors in pipeline stocks obtained the benefit of high leverage, resulting in a return of 12 per cent to 14 per cent on common equity. (In 1960, we estimate that the average return was about 12 per cent, excluding deferred taxes from the equity; and Walter Herrman of Southern California Gas calculates a recent average return of 12.92 per cent for fifteen pipeline companies.) Pipeline companies must compete in the market for capital with electric utilities and a tabulation of eleven "average growth" electric utilities indicates an average return on equity of 12.7 per cent in 1960. Thus, it is obvious that the use of the 10-10½ per cent yardstick would downgrade the earnings of the average gas company sharply. In the meantime, the companies must contend with sharply higher cost of senior money, heavy sinking-fund requirements, and the greater market popularity of many electric utility stocks.

Mr. Woodfin stated:

> The managers of the mutual funds, pension funds, and fiduciaries who are charged with the responsibility of investing the money of others in the greatest bull market the country has ever known find the securities of the transmission companies to be in disfavor. Starting in 1960, following the commission's action referred to above with respect to rate of return, the funds became large sellers of pipeline transmission company stocks. The *Commercial and Financial Chronicle* of August 10, 1961, reported that in the first and second quarters of this year, the only group of stocks *clearly in disfavor* with the funds were the natural gas transmission company stocks. In contrast, the electric utilities and the distribution company stocks have done well.

He pointed out that pipeline stocks in the past year have enjoyed a much smaller gain in average price than the distribution companies, the electric utilities, and the Dow-Jones industrial average. (See chart on page 683.) These trends, he concluded, indicate the transition of the average pipeline stock from a growth stock to a yield security; and since today's investor prefers growth securities, this places new offerings at a distinct disadvantage.

Because of the problem of renewing gas supplies, the pipeline utilities reflect a higher risk factor than the electric utilities and should receive a higher return. Amortization and sinking-fund require-

RECENT UTILITY BROCHURES BY WALL STREET FIRMS*

Company Analyses	*Firm*	*Month Issued*
American Natural Gas	Laidlaw & Co.	Aug.
American Tel. & Tel.	Bank of New York	Sept.
Arkansas Western Gas	A. C. Allyn & Co. (Chicago)	Aug.
Bell Tel. of Canada	Canadian Business Service	Aug.
British Columbia Electric	Greenshields & Co., Inc. (Montreal)	Sept.
British Columbia Power	A. E. Osler Co., Ltd. (Toronto)	Sept.
British Columbia Power	Canadian Business Service (Toronto)	Aug.
Carolina Power & Light	F. S. Smithers & Co.	Aug.
Central Illinois Light	F. S. Smithers & Co.	Sept.
Central Illinois Light	H. Hentz & Co.	Oct.
Central Maine Power	Schirmer, Atherton & Co.	Aug.
Columbia Gas System, Inc.	Argus Research Corporation	Sept.
**Commonwealth Edison	Eastman Dillon, Union Securities & Co.	Sept.
**Commonwealth Natural Gas	Eastman Dillon, Union Securities & Co.	Sept.
Consumers Power	Fahnestock & Co.	Aug.
Dayton Power & Light	Argus Research Corporation	Aug.
Delaware Power & Light	Dean Witter & Co.	Aug.
**Duquesne Light	Eastman Dillon, Union Securities & Co.	Sept.
Duquesne Light	Halle & Stieglitz	Aug.
Ericsson Telephone	W. E. Hutton & Co.	Sept.
Florida Water & Utilities	Schirmer, Atherton & Co. (Boston)	Aug.
Gatineau Power	Royal Securities Corp., Ltd.	Sept.
Gatineau Power	Royal Securities Corp., Ltd.	Aug.
General Telephone	Laird, Bissell & Meeds	Aug.
General Waterworks	Robinson & Co.	Aug.
International Tel. & Tel.	Eastman Dillon, Union Securities & Co.	Aug.
International Tel. & Tel.	Merrill Lynch, Pierce, Fenner & Smith	Aug.
**Iowa Southern Utilities	Eastman Dillon, Union Securities & Co.	Sept.
Jamaica Public Service	Neuberger & Berman	Aug.
**Kentucky Utilities	Eastman Dillon, Union Securities & Co.	Sept.
Lake Superior District Power	Loewi & Co. Incorporated (Milwaukee)	Sept.
Mid-America Pipeline	Halle & Stieglitz	Aug.
Mississippi Valley Gas	Equitable Securities Corp.	Sept.
Montana-Dakota Utilities	Penington, Colket & Co.	Sept.
Niagara Mohawk Power	Goodbody & Co.	Aug.
Pacific Northwest Bell Tel.	Dean Witter & Co.	Sept.
Panhandle Eastern Pipe Line	Goodbody & Co.	July
**Peoples Gas Light & Coke	Eastman Dillon, Union Securities & Co.	Sept.
Rochester Telephone Corp.	Ladenburg, Thalmann & Co.	—
San Diego G. & E.	Argus Research Corporation	Aug.
San Diego G. & E.	Van Alstyne, Noel & Co.	Aug.
**San Diego G. & E.	Eastman Dillon, Union Securities & Co.	Sept.
Shawinigan Water & Power	Goodwin Harris & Company	Aug.
Shawinigan Water & Power	Estabrook & Co.	Aug.
Southern Natural Gas	Fahnestock & Co.	Aug.
Suburban Propane Gas	Halle & Stieglitz	Aug.
Texas Gas Transmission	H. Hentz & Co.	Aug.
**Utah Power & Light	Eastman Dillon, Union Securities & Co.	Sept.
Tabulations, General Studies, Etc.		
Electric Utilities with Above Average Margin of Reserve Generating Capability	Goodbody & Co.	Sept.
Five Moderate Growth Utilities	Carl M. Loeb, Rhoades & Co.	July
Natural Gas—A Growth Industry in Transition	Goodbody & Co.	Aug.
The Metropolis (Electric Utilities in Big Cities)	Reynolds & Co.	Aug.

*Published several times a year; last previous list was in August 17th issue.
**In monthly Public Utilities Bulletin.

ments place heavy demands on cash flow, while the electric utilities are not thus plagued. Also, the electric utilities have a greater advantage than gas with respect to widening use per customer.

There is a more serious angle to the threat that the pipeline companies may be regulated on the basis of a 10-10½ per cent return on equity—few of the companies will be able to finance their expansion programs because their earnings would not meet the coverage requirements of their bond indentures much longer. The life insurance companies cannot be expected to provide $8 to $9 billion new money over the next decade under these conditions. "In case after case," he stated, "insurance companies' representatives have expressed fear of reduced coverages and I feel they are somewhat fed up with the whole thing because the commission evidently refuses to heed their warning."

IF the insurance companies relinquish their rôle in supplying senior money, the pipelines would have to sell large amounts of common stock at a time when equities are already somewhat in disfavor. Moreover, investor confidence is also being eroded by other factors such as (1) the increasing competition of coal and oil for the vital interruptible industrial load; (2) the increasing cost of construction; (3) the possibility that Congress may enact legislation prohibiting pipelines from filing for new rate increases while old ones are pending, or requiring them to place the increased revenues in escrow; (4) the move in Congress for establishment of a "national fuel policy" which might favor coal; (5) the "end use" decision in the Transco case; and (6) the decision in the El Paso case denying tax benefits to the pipelines.

Mr. Woodfin also pointed out that in order to take care of industry expansion through 1970 the tempo of drilling, and the "success ratio" in bringing in new wells, must be substantially improved.

He stated:

> Currently, the reserves are arithmetically sufficient for a 20-year gas supply at the present rates of withdrawal. This, however, is a beguiling statistic. This does not take into consideration the fact that the deliverability of these reserves is not a 20-year deliverability, but perhaps a 30- or even 40-year deliverability. Consequently, what appears to be a 20-year supply of gas at present rates of withdrawal is actually a much shorter supply. Most of the transmission companies have ample *current supplies* of gas, but their full deliverability in most cases does not extend more than ten to twelve years at best.

THERE is no present incentive for a pipeline to develop its own gas supply, although a company owning a large portion of its own supply enjoys greater flexibility in operations and in making future commitments. Moreover, with drilling risks increasing each year, and good prospects harder to find, maintenance of independent drilling activities on an adequate scale will depend upon a continuation of tax depletion advantages, which are currently being attacked in Congress. The action of the Treasury Department in questioning ABC transactions also reduces the incentive to new drilling.

In attempting to make recommendations to the commission that are realizable, he suggested elimination of ritualistic formulas or mechanistic approaches in connection with fixing rate of return, and the adoption of more flexible methods of determining rates. The staff

should be instructed to balance properly the interests of consumers, pipelines, and producers, rather than to act only in the consumer interest.

Electric Heating Costs In Pennsylvania

PENNSYLVANIA POWER & LIGHT has issued a leaflet entitled "You Can't Beat Electric Heat." More than 750 homes and apartments in that company's service area are heated entirely by electricity and over 60 per cent of these installations were made during the past eighteen months. Negotiations are in progress for installation of electric heat in some 900 more new homes and apartments. Also thousands of other customers have installed supplementary electric heating equipment in new additions or in hard-to-heat rooms.

ESTIMATES were presented for the cost of heating various homes with five to eight rooms (using the new RH rate of 1.65 cents per kilowatt-hour) ranging from $229 to $440 per annum. The company stated:

> If you are building a new home, electric heating equipment and proper insulation can be installed for no more .... and in many cases for less ....than conventional oil, gas, or coal-fired systems with customary insulation. As one cost-saving feature, you don't need to pay for a chimney. If you're planning to modernize your present home and if it can be properly insulated, you can install flameless electric heating at a cost competitive with fuel-fired systems.

FINANCIAL DATA ON ELECTRIC UTILITY STOCKS

Approx. Rev. (Mill.)			*10/2/61 Price About*	*Dividend Rate*	*Approx. Yield*	*Recent Share Earns.*	*% Incr. in Share Earnings Recent*	*5-yr. Avg.*	*Price-Earn. Ratio*	*Div. Payout*	*Approx. Book Value*
$159	S	Allegheny Power System ..	46	$1.70	3.7%	$2.37Au	—	3%	19.4	72%	$18
338	S	American Electric Power .	68	1.88c	2.8	2.45Au	—	6	27.8	77	24
74	S	Arizona Pub. Service	38	.72	1.9	*1.05Je	*10%	* 9	*36.2	69	19
14	O	Arkansas Mo. Power	26	1.08	4.2	1.45Je	3	5	17.9	74	11
40	S	Atlantic City Elec.	53	1.36	2.6	*1.68Au	*12	* 9	*31.5	81	12
175	S	Baltimore G. & E.	36	1.12	3.1	1.53Je	7	7	23.5	73	13
9	O	Bangor Hydro-Elec.	21	.80	3.8	1.13Je	1	6	18.6	71	30
7	O	Black Hills P. & L.	42	1.60	3.8	2.56Ap	D2	3	16.4	63	21
124	S	Boston Edison	77	3.00	3.9	4.11Je	2	4	18.7	73	52
34	A	Calif. Elec. Power	23	.84	3.7	*1.14Je	*6	* 3	*20.2	74	12
25	O	Calif. Oreg. Power	58	1.60	2.8	*2.15F	*20	*	*27.0	74	27
11	O	Calif. Pac. Util.	24	.90	3.7	1.18Jy	D17	1	20.3	76	13
82	S	Carolina P. & L.	60	1.48	2.5	2.31Au	—	6	28.6	64	21
37	S	Central Hudson G. & E. ..	34	1.04	3.1	*1.49Je	*4	* 7	*22.8	67	14
27	O	Central Ill. E. & G.	27	.88	3.3	1.29Au	12	6	20.9	73	16
45	S	Cent. Ill. Light	49	1.52	3.1	1.89Au	D23	3	25.9	80	19
63	S	Cent. Illinois P. S.	74	2.12	2.9	3.09Au	6	5	24.0	69	21
22	O	Central Louisiana Elec. ...	36	1.00	2.8	1.37Je	12	7	26.3	73	11
44	O	Cent. Maine Power	34	1.52	4.5	*2.09Au	*10	* 2	*16.3	73	25
173	S	Cent. & South West	42	1.02	2.4	1.46Je	6	7	28.8	70	9
13	O	Cent. Vermont P. S.	23	1.08	4.7	*1.32Je	*D5	* 3	*17.4	82	14
153	S	Cincinnati G. & E.	45	1.50	3.3	2.27Je	—	3	19.8	66	16
10	O	Citizens Util. "B"	29	.60	2.1	.84Je	15	8	34.5	71	6

Approx. Rev. (Mill.)		(Continued)	10/2/61 Price About	Dividend Rate	Approx. Yield	Recent Share Earns.	% Incr in Share Earnings Recent	5-yr. Avg.	Price-Earn. Ratio	Div. Payout	Approx. Book Value
136	S	Cleve. Elec. Illum.	63	2.00	3.2	2.89Je	D7	4	21.8	69	25
8	O	Colo. Cent. Power	51	.96	1.9	1.37Je	17	10	37.2	70	12
57	S	Columbus & S. O. E	69	2.00	2.9	3.03Au	3	6	22.8	66	25
469	S	Commonwealth Edison	46	1.00	4.2h	1.97Au	4	10	23.3	51	35
17	A	Community P. S.	46	1.00	2.2	1.54Je	3	5	30.0	65	13
89	O	Conn. Lt. & Power	31	1.20	3.9	*1.47Au	*D1	* 6	*21.1	82	15
656	S	Consol. Edison	78	3.00	3.8	*3.64Je	*D5	* 5	*21.4	82	50
281	S	Consumers Power	75	2.60	3.5	3.53Jy	D7	2	21.2	74	36
96	S	Dayton P. & L.	27	.88	3.3	1.22Je	13	3	22.1	72	31
55	S	Delaware P. & L.	54	1.20	2.2	1.74Je	7	8	31.0	69	14
279	S	Detroit Edison	60	2.20	3.2	2.70Au	6	2	22.2	81	28
167	S	Duke Power	58	1.60	2.7	2.12Je	D5	7	27.4	75	22
105	S	Duquesne Light	31	1.18	3.8	*1.51Je	* 2	* 5	*20.5	78	10
38	O	East. Util. Assoc.	43	2.20	5.1	2.57Je	D8	—	16.7	87	26
3	O	Edison Sault Elec.	19	.90	4.7	1.14Je	D5	—	16.7	79	10
19	O	El Paso Electric	30	.62	2.1	.86Au	D1	9	35.0	72	12
13	S	Empire Dist. Elec.	43	1.52	3.5	2.08Jy	—	7	20.7	73	17
68	S	Florida Power Corp.	46	.88	1.9	1.37Je	12	12	33.6	64	11
173	S	Florida P. & L.	78	1.12	1.4	2.05Je	1	15	38.0	55	17
4	O	Florida Pub. Util.	27	.72d	2.7	1.24Je	D8	7	21.8	58	11
205	S	General Pub. Util.	31	1.20	3.9	*1.56Je	*D2	* 5	*20.0	77	15
7	O	Green Mt. Power	18	.80	4.4	.93Je	D2	4	19.4	85	13
86	S	Gulf States Util.	43	1.00	2.3	1.29Au	D8	5	33.3	77	13
54	A	Hartford Electric	77	3.00	3.9	*3.71Je	*2	1	*20.8	81	43
31	O	Hawaiian Electric	100	2.50	2.5	3.62Je	4	5	27.6	69	37
116	S	Houston L. & P.	117	1.60	1.4	3.20Au	D1	5	36.4	50	24
38	S	Idaho Power	35	1.00	2.9	1.43Je	8	6	24.5	70	29
110	S	Illinois Power	81	2.20	2.7	3.06Au	5	11	26.5	72	20
56	S	Indianapolis P. & L.	61	1.90	3.1	2.74Je	6	7	22.3	69	19
34	S	Interstate Power	24	.95	4.0	1.15Je	D3	4	20.9	83	9
46	S	Iowa Elec. L. & P.	51	1.80	3.5	2.68Au	2	5	19.0	67	21
51	S	Iowa-Illinois G. & E.	50	1.90	3.8	2.56Au	D3	3	19.7	74	20
51	S	Iowa P. & L.	45	1.60	3.6	2.18Je	D9	2	20.6	73	20
42	O	Iowa Public Service	25	.88	3.5	1.41Au	10	5	17.7	62	11
17	O	Iowa Southern Util.	37	1.48	4.0	2.04Au	D6	4	18.1	73	21
68	S	Kansas City P. & L.	74	2.32	3.1	3.42Au	6	6	21.6	68	31
37	S	Kansas G. & E.	65	1.68	2.6	2.89Au	7	8	22.5	58	23
57	S	Kansas P. & L.	46	1.48	3.2	2.39Je	D2	7	19.2	62	19
49	O	Kentucky Util.	46	1.72	3.7	2.76Je	2	6	16.7	62	22
8	O	Lake Superior D. P.	28	1.28	4.6	1.84Je	6	4	15.2	70	18
145	S	Long Island Ltg.	57	1.50	2.6	*2.18Je	* 1	* 8	*26.1	69	20
71	S	Louisville G. & E.	61	1.52	2.5	2.67Je	D1	8	22.8	57	22
13	O	Madison G. & E.	36	1.00	2.8	2.16Je	6	3	16.7	46	21
5	A	Maine Pub. Service (o)	20	.96	4.8	1.20Au	6	4	16.7	80	14
8	O	Michigan G. & E.	96	2.00e	5.4e	5.60Je	3	8	17.1	36	29
215	S	Middle South Util.	38	1.06	2.8	1.56Je	14	9	24.4	68	14
35	S	Minn. P. & L.	40	1.60	4.0	2.35Au	D1	5	17.0	68	21
16	S	Missouri P. S.	26	.72f	4.8f	1.02Je	D10	5	25.5	71	8
9	O	Missouri Util. (l)	25	1.00	4.0	1.36Je	9	2	18.4	71	19
49	S	Montana Power	43	1.12	2.6	1.49Je	8	6	28.8	75	10
9	O	Nevada Power	47	.84m	1.8	1.56Jy	17	5	30.1	54	15
180	S	New England Elec.	24	1.08	4.5	1.35Je	D2	2	17.7	81	15
55	O	New England G. & E.	32	1.24	3.9	1.88Je	11	6	17.0	66	18
110	S	N. Y. State E. & G.	37	1.30	3.5	*2.08Au	*14	* 8	*17.8	63	19
299	S	Niagara Mohawk Power	44	1.80	4.1	*2.32Je	*D1	—	*19.0	78	23
124	O	Northern Indiana P. S.	43	1.20	2.8	1.80Je	9	5	23.9	67	28
183	S	Northern Sts. Power	35	1.18	3.4	1.52Je	4	5	23.0	78	12
13	O	Northwestern P. S.	28	1.20	4.3	1.60Je	D9	5	17.5	75	13
160	S	Ohio Edison	46	1.60	3.5	2.16Au	2	4	21.3	74	17
62	S	Oklahoma G. & E.	43	1.20	2.8	1.54Au	11	5	27.9	78	11
31	S	Orange & Rockland Util.	58	1.20	2.1	*1.78Je	* 9	*12	*32.6	67	14
20	O	Otter Tail Power	38	1.80	4.7	2.26Je	D4	2	16.8	80	25
648	S	Pacific G. & E.	89	2.80	3.1	*4.51Je	*16	* 5	*19.7	62	42
63	O	Pacific P. & L.	50	1.80	3.6	*2.20My	*16	* 5	*22.7	81	20
142	S	Penn. P. & L.	33	1.25	3.8	1.72Au	D4	4	19.2	73	13

Approx. Rev. (Mill.)		(Continued)	10/2/61 Price About	Dividend Rate	Approx. Yield	Recent Share Earns.	% Incr. in Share Earnings Recent	% Incr. in Share Earnings 5-yr. Avg.	Price-Earn. Ratio	Div. Pay-out	Approx. Book Value
273	S	Phila. Electric	32	1.20	3.8	*1.50Jy	* 3	* 4	*21.3	80	28
45	O	Portland Gen. Elec.	46	1.52	3.3	2.18Au	11	5	21.1	70	19
89	S	Potomac Elec. Power	42	1.44	3.4	*1.98Je	* 2	* 6	*21.2	74	20
113	S	Pub. Serv. of Colo.	92	2.10m	2.3	*3.53Je	*32	* 4	*26.1	59	26
394	S	Pub. Serv. E. & G.	62	2.00	3.2	*3.25Je	*34	* 4	*19.1	62	28
92	S	Pub. Serv. of Ind.	66	2.20	3.3	2.74Au	7	2	24.1	80	28
35	O	Pub. Serv. of N. H.	24	1.08	4.5	1.42Au	2	2	16.9	76	14
20	O	Pub. Serv. of N. M.	39	.72	1.8	1.03	3	11	37.8	70	13
37	S	Puget Sound P. & L.	40	1.56	3.9	*1.98Je	*D6	* 7	*20.2	79	23
76	S	Rochester G. & E.	57	1.80b	6.26	*3.04Je	* 1	* 8	*18.7	59	32
11	S	St. Joseph L. & P.	38	1.60	4.2	2.14Je	D6	8	17.8	75	19
81	S	San Diego G. & E.	35	1.20	3.4	1.55Jy	D19	9	22.6	77	19
12	O	Savannah E. & P.	33	1.12	3.4	1.40Ap	14	4	23.6	80	14
14	O	Sierra Pacific Pr.	33	.88	2.7	1.08Au	D12	12	30.6	81	9
306	S	So. Calif. Edison	86	2.60k	3.0	*4.58Je	* 5	* 7	*18.8	57	44
56	S	So. Carolina E. & G.	57	1.50	2.6	2.07Je	4	8	27.5	72	19
297	S	Southern Co.	58	1.50	2.6	2.00Au	—	7	29.0	75	17
22	S	So. Indiana G. & E.	49	1.70	3.5	2.71Au	8	3	18.1	63	23
4	O	Southwestern E. S.	22	.76	3.5	1.01Jy	—	5	21.8	75	8
53	S	Southwestern P. S.	32	.88	2.8	1.11Jy	D3	8	28.8	79	7
41	A	Tampa Electric	45	.80	1.8	1.20Au	—	12	37.5	67	11
202	S	Texas Util.	105	2.08	2.0	3.18Au	4	9	33.0	65	22
49	S	Toledo Edison	23	.70	3.0	1.11Je	1	1	20.7	63	10
20	O	Tucson G. E. L. & P.	40	.80	2.0	1.02Je	D18	9	39.2	78	9
159	S	Union Electric	50	1.80	3.6	*2.18Je	* 3	* 7	*22.9	83	18
40	O	United Illuminating	34	1.40	4.1	*1.69My	*D3	* 2	*20.1	83	16
8	O	Upper Peninsula Pr.	36	1.70	4.7	2.31Ma	20	—	15.6	74	20
53	S	Utah Power & Light	40	1.32	3.3	1.82Au	D4	4	22.0	73	20
161	S	Virginia E. & P.	63	1.30	2.1	*1.90Au	* 4	* 8	*33.2	68	16
40	S	Wash. Water Pr.	49	2.00	4.1	*2.49Au	* 6	* 3	*19.7	80	29
87	O	West Penn Power	75	3.20	4.3	3.62Je	3	2	20.7	88	26
14	O	Western Lt. & Tel.	33	1.20	3.6	1.79Au	5	6	18.4	67	29
34	O	Western Mass. Cos.	27	1.20	4.4	1.56Au	D4	1	17.3	77	19
141	S	Wisc. El. Pr. (Cons.)	50	1.80	3.6	2.71Je	1	3	18.5	66	29
48	O	Wisconsin P. & L.	42	1.48	3.5	2.33Je	D4	8	18.0	64	21
48	S	Wisconsin P. S.	35	1.40	4.0	2.03Au	D1	4	17.2	69	18
		Averages			3.4%		3%	6%	23.3	71%	
		Foreign Companies									
$127	S	American & Foreign Pr.	10	$ .50	5.0%	$1.76Ma	48%	0%	5.7	28%	$33
161	A	Brazilian Traction	4	—	—	.98De	70	—	4.1	—	29
103	A	British Col. Power	33	1.60	4.8	2.37De	D5	3	13.9	67	32
26	O	Calgary Power	25	.40	1.6	1.09De	14	13	22.9	37	6
26	O	Canadian Inter. Power	12	.50	4.2	3.55Je	D2	NC	4.3	14	24
19	A	Gatineau Power	35	1.60	4.6	2.25De	13	2	16.6	71	22
17	A	Quebec Power	33	1.60	4.8	2.53De	8	9	13.0	63	27
83	A	Shawinigan Water & Power	26	.80	3.1	1.54De	6	6	16.9	52	19

*Deferred taxes resulting from liberalized depreciation are not normalized. If they had been normalized the price-earnings ratio would be higher, and the rate of increase in share earnings would be smaller. D—Decrease. NC—Not comparable. A—American Stock Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Jy—July; Au—August; Se—September; Oc—October; N—November; De—December. b—Also 3 per cent stock dividend (paid January 25, 1961) included in the yield; similar dividends are paid annually, representing balance of earnings. c—Also 2½ per cent stock dividend January 10, 1961. d—Also 2 per cent stock dividend May 1, 1961. e—Also regular annual 3.3 per cent stock dividend (3 per cent in previous years), included in the yield. f—Also regular stock dividend of one-half per cent quarterly, included in yield (paid since 1956). h—Also 2 per cent stock dividend payable November 1, 1961, included in yield; stock dividends are paid annually, reflecting balance of earnings. j—The rate of increase would be 12 per cent if the present number of shares had been used to compute share earnings of past years, instead of using the number of shares actually outstanding at the end of each year. k—Also 4 per cent stock dividend February 24, 1961. l—Adjusted for 50 per cent stock dividend June 5, 1961. m—Fifty per cent stock dividend payable January 18, 1961—cash dividend on new stock 84 cents. n—Also 5 per cent stock dividend February 17, 1961. o—Adjusted for 13-for-10 stock split record June 27, 1961.

What the State Commissioners Are Thinking About

Excerpts and digests from the opinions expressed in reports and addresses at the annual convention of the National Association of Railroad and Utilities Commissioners in Atlantic City, New Jersey, from September 25th to 28th, 1961.

Retiring President's Address

"PULLING together the fragmented federal policies and laws on matters like transportation, communication, and energy fuels, will be a huge and highly controversial job. What to do about them has been discussed extensively in several controversial study reports. The contents of these documents are voluminous and comparisons of the studies are not easily accomplished. Some of these reports are concerned with the entire transportation industry; others are directed toward the entire regulatory scheme . . .

"The pressure on government to do something to the federal regulatory system seems likely to continue and it is my opinion that the NARUC cannot assume the proverbial ostrich-like position and remain indifferent and silent while major changes in regulatory laws and procedures are being debated. If the important problem of keeping regulatory agencies apace of the times, in step with the technological advances achieved in the industries regulated, and free from undue influences to be resolved without a manifestation of interest on the part of this association, the least that can be said of us is that we have been wantonly aloof and completely detached from reality.

"Regulatory lag is a malady not peculiar to any one commission—federal or state. In many instances, it presents an aggravating and critical problem. Usually, its causes are well known and easily identified. In fact, one investigating group states in its report that the record is replete with evidence showing its causes. Some experts contend the answer to many of the problems is to be found in adhering to a system akin to those followed by the judiciary. Other students favor a less judicialized approach and recommend more informal methods and less rigid procedures. However, I think we will all agree that the job of keeping regulatory procedures updated is a constant one, and that it should be a continuing one for this association.

"Confronted as we are with the hard facts of the record, it should behoove the NARUC, through its officers and appropriate committees, to be alert to and assist

in the remedying of procedures and practices responsible for regulatory traffic jams.

"The efficiency and integrity of regulatory commissions' operations are basic to the continual economic development of this country under a system of private enterprise. Promoting efficiency and preserving the integrity of our regulatory system are real and important reasons why the members of this association must maintain a constant appraisal of the standards and procedures of all regulatory agencies. We must ever encourage and manifest an energetic concern with the efficiency of their operation, and with their faithfulness to the responsibilities imposed upon them."

—PETER E. MITCHELL,
Member, California Public Utilities Commission.

On Regulatory Streamlining

"THE challenge of the sixties to the administrative process is not a single, simple challenge. It has numerous facets to it with respect to which I have had occasion to make a series of observations as well as to suggest a number of remedies. Some important steps in this direction have already been taken at the federal level. How effective they will be remains to be seen but the results should not be too long in forthcoming.

"These steps have consisted, in the main, of the delegation of some of the manifold functions that now are such a burden upon the members of our regulatory agencies, causing not merely inordinate delays but absorbing the time and energy of these individuals to such a degree as to prevent the type of economic and industrial planning which should attend their functioning. For I profoundly believe that the economic health of the industries subjected to regulation is today of more importance than controlling those abuses that may two or three decades ago have been the prime reason for the creation of regulatory controls.

". . . We all know the ills of the natural gas industry both as they affect the consumer as well as the producer. Rates are unstable and construction long overdue has been halted. In the labor-management field the only progress that is definitely apparent is the patent increase in the number of representation and unfair labor practice cases on the docket of the National Labor Relations Board. In the securities field we have seen a spate of worthless and even fraudulent issues unloaded upon a gullible and greedy public, not to mention the host of investment counselors that have come into being, many of whom have the ethics of touts at the race tracks. . . . Only one field appears to have accomplished its objectives in a way that has effectively balanced the interests of consumer and producer, and that is the field of public utility regulation, where, however, new but old theories of reproduction cost are threatening to resuscitate the conception that this industry should also be subjected to speculative rather than investment pressures.

"The need for the formulation of policies is particularly apparent in the transportation field. We need adequate standards which, if they do not dictate, must forcefully guide mergers in the rails, trucks, and in aviation. We need revision of our tax policies, not merely as they bear upon the land and physical facilities of the rails, but as they affect depreciation reserves and the issue of obsolescence which, with the march of science, is a different animal than it was when the rails held an undisputed monopoly over transportation.

"Our lack is certainly not that of technical competence. The lack is our ability to mold our regulatory controls to fit the surge in our initiative. Some of it derives from the complications inherent in our federalist system, streaked as it has been with the heavy strain of localism. But I would not trade that system for the monolithic governments we find abroad. Liberty with us is too precious a possession to brook even the benevolent dictatorship of a deGaulle, and our insistence upon fairness—'due process of law'—is so deeply ingrained that we will continue to sacrifice speed and efficiency to an innate concern over the rights of the individual. But all of these factors can be carried too far, especially with the threat of mortal danger high over the horizon. And regulation—active, efficient, and effective—

has an enormous place in meeting the challenge of that threat, particularly as respects this decade. Regulatory streamlining is thus a 'must,' a must for the survival of our beliefs in the effectiveness of our system of private enterprise and in the preservation of the liberties of free men."

—JAMES M. LANDIS,
Former Special Adviser to President Kennedy.

On Regulatory Lag

"REGULATORY lag generally, may be defined as the interval of time elapsing between an application for relief to a regulatory agency on a matter subject to its jurisdiction, and the final dispositive action by that agency in connection therewith. It covers a multitude of subjects, being coextensive with the jurisdiction of the particular agency involved. Properly speaking, it does not include the period consumed by court or appellate review of the regulatory agency's order. These latter proceedings, interminable though they may sometimes appear to be, at least have the battle lines clearly drawn, the issues clarified, and the questions formulated. In preparing for them all parties proceed on familiar ground, and plan their steps accordingly.

". . . we are seeking a specific means and method to effectuate the achievement spelled out by the legislature in our Public Utility Law: 'The commission shall give to the hearing and decision of any such [rate] proceeding preference over all other proceedings and decide the same as expeditiously as possible.'

"One of the most important, and we hope effective, features of the new rules is the pretrial conference system in rate proceedings, and the submission of prepared testimony in advance. It is proposed that when a tariff has been suspended, rules formed along the following lines will apply. That direct testimony of the witnesses for the utility supporting its prima facie case, will be prepared in written question and answer form, and such prepared testimony and related exhibits to be distributed to the commission staff and to the opposing parties not more than three weeks after the beginning of the suspension period. Further, that prepared testimony and exhibits of complaining parties are likewise to be distributed not less than ten days in advance of the hearing at which such testimony and exhibits are to be presented. At hearings where prepared testimony is presented the witness responsible therefor would authenticate his testimony (unless the examiner, for stated reasons, requires him to read it orally), and it would be entered in the record as if given orally. Thereafter, opposing parties would be entitled to file motions to strike any part of the testimony and the exhibits related thereto if deemed irrelevant, incompetent, or immaterial. In connection with this program there are two other steps in contemplation relating to pretrial conferences. Immediately following suspension of rates, a preliminary pretrial conference of all parties may be called. Its purpose would be to assist commission staff personnel and the respondent utility to clarify, simplify, and establish all data which the utility expects to use as a base for its rate relief. Primarily, it is intended to systematize the case in chief to be presented by the utility in the form of prepared or canned testimony, records, and exhibits. The second pretrial conference would be for the purpose of establishing a schedule of specific dates on which hearings are to be held.

"Also at this conference the entire proceeding can be analyzed and catalogued. It is expected that it will be held within ten days of filing of the utility's prepared testimony and exhibits, the latter having been due three weeks following the suspension date as previously stated. At this pretrial conference the real issues would be defined, stipulations and agreements concluded, definite dates for hearings arranged, and as many questions determined as are capable of resolution. We hope the net effect will be to eliminate a great deal of wasted motion, verbage, and relatively immaterial details which consume so much time, money, and effort in the average formal rate case proceeding. . . ."

—JOSEPH SHARFSIN,
Chairman, Pennsylvania Public Utility Commission.

WHAT THE STATE COMMISSIONERS ARE THINKING ABOUT

On Nuclear Energy in the Electric Industry

"AN item of interest in the power reactor field is the decision of the U. S. Supreme Court in June, 1961, upholding the Fermi fast breeder reactor construction permit and the authority of AEC to have issued it . . . That reactor is presently scheduled to go critical in 1961.

"Research is continuing on the direct conversion of heat to electricity but there have been no spectacular results or announcements on thermoelectric, thermionic, or magnetohydrodynamic generators. While there have been some announcements of favorable results in controlled fusion experiments, indications are that it will not be a prime source of power for a considerable number of years.

"In the matter of state control, the Atomic Energy Commission has recently approved criteria by which it will eventually transfer to eligible state administrations, regulatory duties over certain radioactive materials. Duties of the states will include responsibility for rule making, licensing, inspection, compliance, and enforcement. A number of states are taking action to comply with AEC criteria and take over these controls.

"The Atomic Energy Commission is still the only agency reprocessing spent fuel elements. The Industrial Reprocessing Group of five investor-owned utilities and a chemical company is now making its second study on the feasibility of constructing a commercial reprocessing plant."

—*Report of the Committee on Nuclear Energy in the Electric Industry, George P. Steinmetz of Wisconsin, chairman.*

On Rates of Public Utilities

Telephone Rates

"STATE commissions granted rate increases amounting to $8.6 million annually in 1959. At the end of 1959, about $29 million in proposed increases were pending. In 1960, local and intrastate increases of $26.2 million per year were approved and at the end of 1960, applications proposing $18.3 million were pending. A comparison of these amounts with $104 million per year of increases approved in 1958 would indicate that considerable progress has been made by the industry in combating the effects of inflation. Consideration must also be given to the $50 million per year reduction in interstate toll rates in 1959.

Gas-electric Rate Competition

"A recent development for large installations consists of a gas turbine driving an electric generator for base load with gas engine driven generators for peaking and stand-by. Exhaust gases from the turbine are passed through a waste heat boiler which generates steam for heating, cooking, and water heating. Steam is also used from the boiler to power refrigeration machines for air conditioning.

"Future research promises to further intensify the competition between electric and gas utilities with resulting influence on the rate policies of the utilities. A number of electric utilities have recently put into effect new schedules of promotional rates for all-electric homes and further developments in this respect may be expected.

Natural Gas Rates

"Since the end of World War II, natural gas customers have increased 3½ times and the natural gas industry has grown at a still greater rate because of the popularity of natural gas for space heating. Today, the presently unserved areas hold less prospect for growth of the industry than the development of additional markets within the areas presently served. Any resulting improvement in load factor will produce corresponding improvement in earnings since practically all distributors purchase gas under a demand and commodity form of rate.

Higher Trends

"The continuance of steady inflationary pressures would seem to argue that utility rates will continue to rise. However, your committee believes that new technology, the

marketing of new services, and more and more automation will continue to hold the prospective rise in utility rates to a level well below that of the overall increase in cost of living. This has been the case in the past decade, and under realistic and forward-looking regulation, it can be so in the future."

—*Report of the Committee on Rates of Public Utilities, Paul E. Weiland of Ohio, chairman.*

On Regulatory Procedure

"A NUMBER of bills have been introduced in Congress having objectives similar to the reorganization plans—that of providing flexibility to the commissions in procedure and cutting down the delay in disposing of cases by permitting the delegation of functions to subordinates. Each of them also contains provisions aimed at proscribing ex parte communications, or what has been called the 'backdoor influence.' The need for this latter provision was demonstrated by the hearings and report of the House Committee on Legislative Oversight."

—*Report of the Committee on Regulatory Procedure, Joseph J. Brown of Nebraska, chairman.*

On Service, Facilities, and Safety of Operation

"WITH the rapid growth and expansion in the natural gas field, there appears to be as many different safety rules and regulations as there are states, companies, and commissions. This appears true, to some extent, with the other utilities. Therefore, your committee further recommends that a study be made of the various rules and regulations to determine whether or not it would be feasible to develop some kind of uniform or model safety code.

Electric Utility Industry
(Excluding Alaska and Hawaii)

Service and Facilities

"The electric industry continued its record-making growth in 1960, advancing to new levels of power-producing capability. Although the American economy followed a somewhat uneven path, residential and industrial utilization of electricity resulted in new records of service to the nation's life and economy.

Accident Prevention in the Electric Utility Industry

"The electric utility industry's accident prevention program brought the industry's accident frequency rate for 1960 below the all-industry national rate for the second year in a row. The previous year was the first since 1945 that the electric utility industry had a lower accident frequency rate than the all-industry rate.

Gas Industry

Service and Facilities

"The year 1960 witnessed the gas utility and pipeline industry achieving many new records in almost all phases of operation. The total customers served during 1960 averaged 33.05 million, while customers at year-end reached a total of 33.3 million. The natural gas industry served an average of 30.55 million customers, a gain of more than 1.3 million over the preceding year.

"Total sales of 92.9 billion therms were 5.7 per cent higher than the 87.9 billion in 1959. Natural gas sales of 90.5 billion therms represented over 97 per cent of the total sales of the gas utility and pipeline industry to ultimate consumers.

Utilization Bureau

"The latest report from the National Office of Vital Statistics, U. S. Public Health Service, indicated that during 1959 there were fewer fatalities due to utility gas than in any of the thirty-odd years during which time such records have been compiled. The principal single cause of accidents in the industry and affecting public safety is attributed to contractor damage during mechanical excavating either in the streets or for house construction. It is suggested that legislation in those states where none is presently in effect be enacted whereby notice in advance of construction must be given,

and providing for a penalty for noncompliance, as a means of promoting safer operating practices during construction.

Telephone Industry

Service and Facilities

"Despite declining business conditions throughout most of 1960, the nation's telephones increased by 3.5 million, reflecting both population growth and expansion of customer needs for increased communications. At year's end, there were over 74 million telephones in service in the United States, and 96 per cent of them were dial operated.

Safety

"Again in 1960, lost time work injury rates for the communications industry were well below those of all industries reporting to the National Safety Council. The all-industry average for 1960 was 6.04 injuries per million work hours. For the entire communications industry it was 1.01 and for the Bell system operating companies it was 0.70."

—*Report of the Committee on Service and Facilities and Safety of Operation of Public Utilities, Patrick D. Sutherland of Washington, chairman.*

On Legislation

"As reported in the 1960 report of this committee, the Executive Committee on February 4, 1960, established a Special Committee to Study Natural Gas Rate Problems, and Honorable Crawford L. Pilcher of Georgia was named chairman of this committee. This committee has been very active, and a number of its members testified before the Senate Committee on Commerce favoring S 666. This bill was introduced by Senator Magnuson, and was sponsored by this association. It proposes to amend the Natural Gas Act so as to eliminate indefinite price clauses, eliminate the prohibition in the act against suspension of rate changes for gas sold for resale for industrial use; prohibit consecutive rate increases resulting from the automatic operation of § 4(e) of the act, and amend § 7(e) of the act requiring FPC to make a determination that the initial price is consistent to the public interest in passing on applications for certificates of public convenience and necessity. The bill prescribed procedural requirements in the hearing and disposition of matters of the FPC.

"This is the ninth year that the Congress has voted to extend for another year the corporate income and excise taxes, and the second year in which tax on communication and transportation of persons has been extended.

"In view of the closeness of the vote in the House and the Senate Committee on Finance, the association and each state regulatory commission should continue in their efforts to completely repeal these taxes."

—*Report of the Committee on Legislation, H. Lester Hooker of Virginia, chairman.*

On the Activities of the Washington Office

"THROUGH the bulletin service issued by the Washington office, we attempt to keep the regulatory commissions represented in our membership advised of all developments in matters of association interest. . . . Much of our time is spent working with the various committees of the association—the Committee on Legislation, the Special Committee to Study Motor Carrier Interstate Registration Authority, the Special Telephone Committee, the Special Committee to Study NARUC Committee Organization, to name but a few. I will leave it to the gentlemen who are chairmen of these and other committees to report to you on developments in each of their respective fields and not duplicate it in my remarks."

—*Report of the Washington Office, Austin L. Roberts, Jr., general solicitor, National Association of Railroad and Utilities Commissioners.*

On Co-operation between State and Federal Commissions

"DURING the past fiscal year, the commission faced a continuation of the increase in natural gas regulatory work. The commission has continued its activities in connection with regulation of the interstate electric utility industry and the licensing of nonfederal hydroelectric projects under the Federal Power Act.

Natural Gas Rate Cases

"In the rate proceedings before the commission, many state commissions actively participated. In some of the independent producer and natural gas pipeline rate cases, in which rate suspensions were ordered, the increased rates were allowed to go in effect under a bond or undertaking to assure refunds of the increased rates ultimately determined to be unlawful.

Other Proceedings and Miscellaneous Matters

"One of the principal means of cooperation by the Federal Power Commission with the various state regulatory commissions is through participation in the activities of the Committee on Accounts and Statistics of the National Association of Railroad and Utilities Commissioners. This committee has as one of its primary objectives the maintenance of uniformity and consistency of accounting regulations and their interpretation and financial reporting. The deputy chief accountant is a member of this committee and participates actively in its work and periodic meetings.

Co-operation with the Federal Communications Commission And State Commissions

"The FCC maintains a close liaison with the NARUC and the individual state commissions, principally through its representation on the various NARUC committees. The Joint Staff Committee, a subsidiary of the Special Committee Co-operating with the Federal Communications Commission in Studies of Telephone Regulatory Problems was very active during the year dealing with matters of mutual interest and concern. The Separations and Toll Rate Disparity Committee explored possible changes in separations with particular emphasis on exchange plant and expenses. At the annual NARUC convention the membership adopted a resolution relieving the Special Telephone Committee of the responsibility for undertaking a detailed investigation and analysis of operational results of the Western Electric Company's and other independent companies' manufacturing subsidiaries' prices and pricing policies because of the great expense of such an undertaking. However, the subcommittee of Western Electric Company continued, and will continue in the future, to prepare its customary analysis of Western Electric earnings, prices, and related policies."

—*Report of the Committee on Co-operation between State and Federal Commissions, Nat B. Knight, Jr., of Louisiana, chairman.*

"9"

On Corporate Finance

The Year in Review

"THE year 1960 was very disappointing from an economic point of view. As we warned in our last year's report (and our prophecy, unfortunately, turned out to be correct), the economy did suffer the effects of another recession, albeit, a relatively mild one. It is against this background that developments in the field of corporate finance must be reviewed.

Capital Markets and the Supply of Money

"The general effect of the economic recession was not felt in the nation's capital markets. As in the past, demand for capital continued to increase, even though at a slower rate of increase. Both the private sector and the governmental sectors raised more capital in 1960 than in the previous year.

Interest Rates

"Nineteen hundred and sixty, like other recession periods, was a year of declining interest rates for all classes. This decline, however, stopped at the end of the year and

since that time no clear-cut trend has become discernible, rather a sideways movement with very minor fluctuations has occurred. This recent action in interest rates can be partially explained by the mildness of the drop in economic activity in the last year compared with the much sharper pace in previous recessions.

Rate of Return and Rate Base

"In recent years there has been considerable discussion and deliberation concerning the relationship between 'rate base' and 'rate of return.' Basing 'rate of return' on an analysis of cost of capital has served to focus the discussion.

"The usual approach to fair rate of return determination by analysis of capital costs, is to determine separately the cost rates applicable to debt capital, equity capital, and preferred stock capital, apply these to the proportions of each type of capital in the particular utility's capital structure (either actual or hypothetical) and thus derive an overall weighted cost of capital, which then forms the basis for a finding as to fair rate of return.

Regulatory Success

"Regulation can justly claim a substantial part of the credit for the continuing success of the utility industries in securing the huge amounts of capital required for their expansion and improvement. The regulatory process, as practiced generally over the last decade, has assured stability to the industry, and has contributed materially to the public confidence in investments in utility equities.

"As a result, utility investments have been most attractive and the industry has been able to secure the tremendous amounts of capital needed at reasonable cost."

—Report of the Committee on Corporate Finance, Richard J. McMahon of Maine, chairman.

On Engineering

"THE committee is actively working on problems with which regulatory commission engineers are constantly being faced. These matters include: methods of making cost-of-service studies, gas safety rules and procedures, methods of protecting railroad-highway grade crossings, sample testing of electric watt-hour meters, compilation of service rules for the various types of utilities, and the place of the commission engineer in the regulation of nuclear energy when it is used for the production of electric power. Because of the difficulties involved in the solution of these problems the Committee on Engineering feels that it can render a worth-while service to the association and to the regulatory commission engineers by seeking answers to the points in question.

Cost of Service

"Various methods of allocating costs have been pursued by Ralph Purucker, but no definite decisions have been reached. It was reported that cost-of-service studies have been used in rate cases in several jurisdictions and these may be of some help to the subcommittee.

"The committee considered a suggestion from the chairman that the efforts of the entire committee be concentrated on the cost-of-service problem immediately following the completion of the present work on utilities' service rules.

"One of the first steps in attacking the cost-of-service problem could be the compilation of a bibliography of material already published on the subject. The chairman asked each member to begin to accumulate references to printed material on cost of service so that a comprehensive bibliography may be prepared.

Electric Meter Testing

"The Statistical Engineering Laboratory of the National Bureau of Standards in February, 1961, released for limited circulation a preliminary report of its analysis of many plans devised for the testing of watt-hour meters in service by the use of statistical sampling techniques.

"The sampling plans which the bureau statisticians considered in their analysis were furnished to them by Leroy Keever's subcommittee and by representatives of the electric utility industry. Some of the plans were being used by utilities, usually with tentative approval of the state commissions, others were being considered by state regula-

tory bodies for approval, and still others were plans designed by utilities but not yet submitted to any regulatory group.

"It is interesting to note that from all of the documents studied by the bureau statisticians they selected three sampling plans for special mention. They are: the plan currently in use by the Baltimore Gas & Electric Company, the plan currently being used by the Duke Power Company, and the plan developed by the Michigan Electric Association.

"It is hoped that the final report of the NBS statisticians can be made available to commission engineers and it is our intent to work on this matter with the view of obtaining widespread distribution of the information contained therein.

Future Projects

"It has been suggested that the committee undertake the task of bringing up to date a comprehensive study of gas service standards made by the National Bureau of Standards about thirty years ago. The result of this study was published in 1934 as National Bureau of Standards Circular No. 405, entitled 'Standards for Gas Service."

—*Report of the Committee on Engineering, Hugh H. Hunter of Maryland, chairman.*

On New Telephone Service Problems

"THE communication problem, reviewed by the Special Telephone Committee during the past year, has covered a wide ambit: new service offerings made or proposed by the telephone industry, space communications by means of satellites, compensation relative to Bell-independent message toll business, state-interstate separation refinements, and sales of manufacturing and servicing subsidiaries to affiliated telephone operating companies.

Telephone Separations

"Extant separation procedures have been studied by this committee and its staff members throughout 1961 in accordance with the association's directive to initiate those refinements requisite to keeping pace with the operational and technological advances of the communications industry.

"FCC staff representatives have participated in these detailed studies; and substantial data, as requested, have been furnished by industry representatives to the Separations and Toll Rate Disparity Subcommittee and its 'task force.'

Toll Compensation Litigation

"Proceedings have been initiated during 1960 and 1961 in six (6) state regulatory jurisdictions—Ohio, Kentucky, Florida, Washington, Indiana, and North Carolina—involving compensation questions relating to jointly rendered message toll telephone traffic interchanged between Bell system operating companies and General system operating companies and, in some instances, other independent operating companies.

Space Communications

"Upon the recommendation of the Special Telephone Committee and at the direction of the Executive Committee, the president of this association, wrote a letter to Vice President Lyndon B. Johnson under date of July 20, 1961, in which this association's vital interest in satellite communications was underscored, the letter relating in part the following:

" 'The regulated common carrier industry has had years of experience in providing communications services of all types under sound government regulation. They have demonstrated the capability and willingness to do the job now. We believe, therefore, that a satellite communications system can be achieved most quickly by allowing the communications common carriers to proceed without delay.

" 'In view of the willingness and desire of private industry to do the job without government subsidy, there appears to be no need to depart from this country's long-standing national policy of placing the responsibility for public communications on the regulated common carrier industry. We in the United States presently enjoyed the most extensive communications system in the world, due in great measure, we believe, to this policy.

"'As Vice President of the United States and chairman of the National Aeronautics and Space Council, we are certain that you share our concern over the need for expediting this new means of communication. We earnestly enlist your assistance in clearing the way for the common carrier industry, under regulation, to proceed with this most important undertaking.'

"In concluding this report, it should be reiterated that the Special Telephone Committee has been truly a 'working committee' by reasons of the co-operative participation of all of its members and their awareness of the vital and important communications problems subject to the committee's consideration. This may prove to be the last annual report of this Special Committee as presently constituted by virtue of the recommended re-establishment thereof as a Standing Committee. It is to be anticipated that the traditions of this Special Committee, on both the commission and staff levels, will be maintained in the regulatory interest of this association.

"No resolution is proposed herewith to perpetuate the duties and assigned responsibilities of this committee on the assumption that the recommendation of the Special Committee to Study NARUC Committee Organization, as approved by the Executive Committee, to constitute this Special Telephone Committee as a Standing Committee pursuant to amendment of the Constitution, will be adopted by the association assembled."

—*Report of the Special Committee Co-operating with the Federal Communications Commission in Studies of Telephone Regulatory Problems, Everett H. Krueger, Jr., of Ohio, chairman.*

On Cost Allocations in the Gas Industry

"It was to be hoped that this Special Committee at this, the completion of the second year of its existence, would be able to submit to this convention for approval a uniform system of allocating costs of natural gas companies operating subject to the jurisdiction of more than one commission. We have virtually completed the formulation of such a plan, together with an accompanying glossary of gas industry terms used in conjunction therewith. A tentative draft of the latter was distributed at a meeting of the Executive Committee of the association earlier this year and some modifications have been made as the result of suggestions from members of that committee. But inasmuch as the final report necessarily involves the preparation of a manual with specific reference to account numbers in the Uniform System of Accounting as Prescribed by the Federal Power Commission for Natural Gas Companies, where applicable, together with proper footnotes, the submission of such a report to this convention has proved to be impossible inasmuch as the committee, together with the Staff Level Subcommittee, is operating without any subsidy from any source except the state commissions and the Federal Power Commission which have been paying the travel expenses of their respective committee members.

"The Staff Subcommittee held three three-day meetings during the year at Chicago, New Orleans, and Denver with almost 100 per cent attendance at each. Your chairman and at least one representative from the Federal Power Commission were also present for each meeting.

"While the task of placing the manual in final form, from a mechanical and drafting standpoint, is one of considerable magnitude, your committee expects to submit to the Executive Committee at an early meeting during the coming year a proposed uniform method of allocating such costs between jurisdictions, for consideration by such Executive Committee, in the hope that, after proper consideration by such committee, the same may come on for consideration by the next national convention of the association."

—*Report of the Special Committee Co-operating with the Federal Power Commission in the Study of Cost Allocations in the Gas Industry, Myron R. Renick of West Virginia, chairman.*

On Valuation

"THE baffling problem of cost recovery for the rendering of service still remains with the regulated industry and the commissions that supervise their activity. The state of flux in valuation regulation has existed from Smyth *v* Ames (1898) to the Federal Power Commission *v* Hope Natural Gas Co. (1944) and continues to be a problem today. At the time of the Hope case, the commissioners were unleashed and at the same time the regulatory job became more difficult since the conundrum of rates, rate making, and valuation had to be analyzed by regulatory commissions to maintain the financial integrity of utilities, to attract capital, and to compensate investors for risk. The 'fairness' test may be dead on the federal level, but it is very much a part of the analysis of state commissions in valuation. Original cost less depreciation dominates the valuation picture today in most state commissions. Reproduction cost and/or replacement cost are rarely accepted as rate bases since there is great uncertainty in the valuation process. Original cost always has the advantages in rate hearings today.

"Much work has been done in the area of index numbers and the establishment of trends in original cost data. A few state commissions have indicated limited acceptance of the concept but the problems of averages, the data chosen for the base, the lack of actual investment, and the approximations of reproduction cost, new, have been cited as reasons for refusing this method of valuation. Attrition has been recognized by a few commissions and rates of return have been the primary factor adjusted.

"A myriad of problems still confronts commissions, including accelerated depreciation, working capital requirements, and construction and acquisition values. As stated, these problems are met on a pragmatic basis by companies and commissions. Inflation and attrition still confront the companies and commissions. The constancy of the price level and the close approximation of wage increases and productivity will contribute the slowdown in the decline in real terms of the rate base. Although commissions must and do implicitly recognize the effects of inflation on the rate base, temporary means of adjustment in rates provide an answer which does not commit the commissions to deep-seated changes in determination of value. Increased efficiency, outside competition in energy production, increased scale of plant, and more research and development should be taken into consideration in valuation. The existence of the utility has been based on normalcy and monopoly, but this does not mean that rapidly changing conditions cannot be met and solutions found by the companies and the commissions."

—*Report of the Committee on Valuation, J. G. Allard of Nevada, chairman.*

On Progress of Regulation of Public Utilities

"YOUR committee has reviewed a large segment of cases decided by various regulatory agencies as well as court decisions published subsequent to our prior report. The majority of these cases deal with the following subjects: rate cases, rate of return, and jurisdiction, powers, and duties of public utility commissions.

Rate Cases

The Ohio Public Utilities Commission held in the case of General Telephone Co. of Ohio *v* Ohio Bell Telephone Co. No. 28,946, June 9, 1961, that in an intrastate toll settlement dispute between the General Telephone Company of Ohio and the Ohio Bell Telephone that in apportioning the cost of General's property between jointly rendered intrastate message toll telephone service and other services, 'exchange circuit plant' should be allocated on the basis of the relative minutes of use of telephone connections established.

"In reviewing the history of the state interstate telephone operations and apportionment concepts the commission maintained that while the actual or relative use principle was an appropriate guidepost in apportionment proceedings it could not totally ignore other facts such as 'necessity' or 'usefulness.'

"The commission also assigned certain digit absorbing equipment to the toll component, finding that such equipment was necessary and was provided to absorb digits needed, useful, and used in the nation-wide total numbering scheme, and that digit absorbing equipment was the only practical method of implementing a uniform nation-wide telephone numbering system for the benefit of the nation-wide toll system.

"While recognizing the integrated nature of the joint Bell-independent toll network and the validity of fixing joint rates on an average cost per unit of use basis, the commission held that at the present point of regulatory development the recognition in this individual proceeding of the partnership concept might disrupt the orderly and co-operative development of uniform telephone separation procedures between federal and state representatives and that, therefore, it was not unreasonable to apportion General's interexchange circuit plant on the basis of relative conversation minute miles between joint Bell-General state message toll telephone service and other services.

"Since the seventy-second annual convention, one additional state has required a fair value rate base. The Kansas commission's use of net original cost was held erroneous and violative of the Kansas statute and Constitution by a Kansas district court which stated that the United States Supreme Court decision in the Hope case could not affect the rate base rule in Kansas which was established by statute and was required by the due process clause of the Kansas Constitution. The court said the company's trended cost figures were entitled to great weight in determining fair value and that evidence of net reproduction cost and of going concern value could not be disregarded. Southwestern Bell Teleph. Co. *v* State Corporation Commission of the State of Kansas (DC Kan, Shawnee Co.) Docket No. 87183, January 4, 1961.

Rate of Return

"The Louisiana Public Service Commission adopted a hypothetical capital structure of 60 per cent debt and 40 per cent common equity and surplus, and stated that under the provisions of the Constitution they were not bound to any fixed or precise rate-making formula. The commission used the earnings-price ratio approach to the cost of equity capital and determined that an overall rate of return of 5.5 per cent on the net plant rate base was adequate. The Supreme Court upheld the commission's order in so far as the rate of return was concerned, but rejected the system-wide rolled-in cost of purchased gas.

"In this same case the applicant made a claim of an operating expense item based on the decline in the purchasing power of the dollar, and a request to incorporate a purchase cost escalation clause in its rate schedules. Both of these features were rejected by the commission and the rejection was upheld by the Supreme Court. United Gas Pipe Line Company, Louisiana Public Service Commission. Order No. 8061, Docket No. 7970 (34 PUR3d 78).

Jurisdiction, Powers, and Duties Of Public Utility Commissions

"The Colorado supreme court held that an interstate natural gas pipeline company making direct sales of gas to a limited number of industrial customers under privately negotiated contracts was not a public utility as defined by the Colorado statutes. The court affirmed a district court judgment setting aside the commission's decision and order asserting jurisdiction over the pipeline company's direct sales. The commission had ruled that utility status was to be tested by the nature of the service rendered, whether a natural or virtual monopoly existed, whether the customers be subjected to arbitrary control, and whether the impact of service, or lack thereof, to a class of customers affects the state or community. The court held that the tests proposed by the commission contained no objective standards which could be applied with any degree of uniformity and that the commission had exceeded its authority by ignoring the statutory definition of a public utility as a corporation operating for the purpose of supplying the public which means indiscriminately supplying all of the public within its capacity. Colorado Public Utilities Commission *v* Colorado Interstate Gas Co. (Colo Sup Ct) 351 P2d 241, 33 PUR3d 242."

—*Report of the Committee on Progress in the Regulation of Public Utilities, Hammond Fowler of Tennessee, chairman.*

On Procurement and Training of Commission Personnel

"FOR the third consecutive year, your Special Committee on Procurement and Training of Commission Personnel has sponsored, in co-operation with the Georgia Institute of Technology, a two-week regulatory commission development short course. The 1961 session was concluded on September 8th, just over two weeks ago. When measured in terms of the reactions of the enrollees, the success of this year's program was significant and unqualified. This was also true for the two sessions of prior years.

"Credit for this achievement must, as in the past, be accredited to the staff committee and particularly to Chairman Robert B. Alford of the Georgia commission who worked closely with the faculty of the Georgia Institute of Technology. The complete report of the staff committee is attached as Appendix A and should be consulted for the details of the course as well as for its suggestions and conclusions. We also wish to acknowledge the generous assistance of our Washington office and the support of the national officers of this association and its Executive Committee. . . .

"Evaluation of the overall success and effectiveness of a program of this type is not readily achieved since much of the validity of the result depends on the tests and measurements applied. Subjectively, in terms of those who have participated, the program, as mentioned above, has been unqualifiedly successful."

—*Report of the Special Committee on the Problem of Procurement and Training of Commission Personnel, Arthur L. Padrutt of Wisconsin, chairman.*

On Regulatory Problems

"I KNOW these problems at firsthand because under our governmental structure in New Jersey the board of public utility commissioners is one of the fourteen principal departments of our state government, and the president of that commission, Mr. Hyland, by virtue of his chairmanship of that department, is a member of the governor's cabinet.

"His problems are not solely the problems of the department of public utilities. They are the concern—an important concern—of the entire executive department, as they should be. In this manner the utilities department is an integral arm of our state government. Problems of utility regulation are discussed not only among the commissioners of the utilities department, and their staff, but they are also reviewed and discussed freely and fully in the regular meetings of the governor's cabinet.

"In the fifteen or sixteen years since the termination of World War II, and particularly during the last ten years, we have experienced a great population explosion which has affected so many of our states. New Jersey got the full brunt of this tremendous growth—a 25 per cent increase in our population between 1950 and 1960—and this on top of a 16 per cent increase in the prior decade, from 1940 to 1950. When you compare this growth rate with the modest 3 per cent in the 1930-40 decade you can readily visualize the profound effect upon our society.

"Translated into terms of utilities regulation, it was the responsibility of our New Jersey utility companies to prepare for this vast population expansion, and the concurrent tremendous industrial and economic development we experienced. It was equally the responsibility of our department of public utilities to see that the utility program was carried through, and on time. We are happy to report that the state government and the utilities fully met this great challenge.

"Here we had a prime example of private enterprise and government, with all the implications and ramifications of utility regulation, working harmoniously in double harness during this period of our greatest economic growth—and working successfully to provide vital services to the public at rates reasonable to the public and adequate to investors."

—ROBERT B. MEYNER,
Governor of New Jersey.

The March of Events

AGA Convention

THE American Gas Association held its forty-third annual convention in Dallas, Texas, early this month with more than 3,000 persons from every state in the union, Canada, and Mexico in attendance.

L. T. Potter, president of Lone Star Gas Company, concluded his one-year term as AGA president and was honored for his service at the opening meeting. E. H. Smoker, president of United Gas Improvement Company, Philadelphia, Pennsylvania, was elected president of the AGA for the coming year.

W. M. Elmer, president of Texas Gas Transmission Corporation and president of the Independent Natural Gas Association of America, emphasized the importance of better intraindustry understanding in order for the natural gas industry to retain the continued support of its customers, its suppliers, and the investing public. He pointed out that one of the priority projects of the industry was price stability of natural gas. It was his view that all segments of the industry should work more closely with the regulatory bodies in achieving this objective.

William J. Murray, Jr., chairman of the Texas Railroad Commission, stressed that there must be greater incentive in the future for exploration and development of new gas reserves to meet forecasted demands.

The commissioner said the only hope for wise legislation amending the Natural Gas Act lies in concerted action by all segments of the gas industry and public bodies representing consumers.

A recent report by the U. S. Department of the Interior to the Joint Committee on Atomic Energy was cited by C. S. Stackpole, AGA managing director, as evidence of long-term gas supplies. The estimate made to this congressional group placed ultimate U. S. and Canadian natural gas reserves in the range of 3,000 to 5,000 trillion cubic feet.

William G. Hamilton, Jr., president of the Gas Appliance Manufacturers Association, and the American Meter Company of Philadelphia, said that past industry progress had come about because "we moved forward as an industry . . . we pooled our talents, our efforts, and our money and welded ourselves into a striking force that could withstand the thrusts of the competitive giants which power the electric industry."

Mr. Hamilton estimated that the electric industry spent more than the gas industry in advertising and promotion

"by at least $5 or $6 to $1." He said gas industry advertising budgets must be substantially increased.

The 1962 convention will be held at Atlantic City, New Jersey, October 8th to 10th.

Arkansas

Gas Rate Increase Approved

A RATE increase which Arkansas Louisiana Gas Company put into effect April 1st for residential and commercial customers on its central pipeline system in Arkansas was approved by the state public service commission. The new tariffs raised the rates 70 cents a month for 144,255 families and businesses served by the company in 53 cities, including Little Rock.

The commission said the company was entitled to net earnings of $2,330,345 per year on its operations in Arkansas. It based this on a 6.34 per cent rate of return set by the state supreme court.

The increase was opposed by a group of eight cities, led by El Dorado and Pine Bluff. The other six were North Little Rock, Camden, Benton, Conway, Norphlet, and Mineral Springs. The El Dorado city attorney said the commission's action would be appealed to the Pulaski circuit court.

Connecticut

Phone Rate Increase Sought

SOUTHERN NEW ENGLAND TELEPHONE COMPANY has asked the state public utilities commission to grant an overall 8 per cent increase in telephone rates. The proposed higher rate schedule would call for an increase of $11.9 million in annual revenue. The company said rates for most home telephone service would be raised one to two cents per day under the proposed schedule.

Other proposed changes include increases in business telephone rates of up to five cents a day; additional increases in charges for private branch exchange and push-button telephone systems and miscellaneous business equipment and services; a 25-cent increase in the monthly charge for extension phones; and increases in initial period and overtime rates for some toll calls made within the state.

Florida

Co-op Permanently Enjoined

A FINAL decree permanently enjoining the Withlacoochee River Electric Co-operative from serving two customers in Pasco county that had previously been served by Tampa Electric Company has been issued by Judge Charles Phillips of the circuit court on the sixth judicial circuit.

Judge Phillips' decree came as the result of two days of hearings in Dade City, after the case had been remanded for further proceedings in line with the Florida supreme court's decision; also, as a result of litigation in Florida courts by the investor-owned utility and the REA co-op for the better part of the last three years.

In his decision, Judge Phillips reminded the court of the primary purpose for

which REA co-ops were originally established and pointed out that, in his opinion, owing to the state supreme court's philosophy regarding co-ops that Tampa Electric had the "pre-emptive right" to serve customers in areas where lines of the two companies were adjacent.

Expansion Needs Outlined

A NEW bond issue of about $50 million will have to be floated by the Jacksonville City Electric Department before 1963 to keep up with demands for electric power in the greater Jacksonville area, according to City Utilities Commissioner J. Dillon Kennedy. He said the $50 million figure was just a "horseback opinion" and a more accurate estimate would have to wait until engineering studies are completed.

Kennedy told members of the established industries committee of the Jacksonville Area Chamber of Commerce that proposed expansion calls for the establishment of another major power plant such as the two existing plants. He said the bond issue would have to be submitted to city voters because the expansion is required before the 1963 state legislature meets.

North Carolina

Plans Study of Utility Laws

NORTH CAROLINA laws governing utility companies and the operation of the state utilities commission may be studied by two state commissions instead of one, according to Governor Sanford. The governor earlier had said he planned to ask the state general statutes commission to study the utility field for a possible overhaul.

However, he told the press recently that he may ask the state commission on reorganization of state government to look into the utility field as well. He said that if both commissions are asked to make the studies, it would be logical for the general statutes commission to examine present laws governing utility companies while the reorganization commission studied the structure and operation of the utilities commission. The governor expressed the hope that any proposed changes could be submitted to the 1963 state legislature.

Ohio

Co-ops File Price-fixing Suit

TWELVE rural electric co-operatives in Ohio have filed suits in federal courts in Columbus against twenty-two electrical manufacturing companies. The co-operatives charged violation of the Sherman Antitrust Law through price fixing and conspiracy.

In the twenty suits filed early this month, the co-operatives asked for triple damages in each case, based on the difference between the $2,354,586 they paid for the equipment and the prices they say it would have cost without price fixing. The suits, which ask the court to issue 135 summonses, assert that the companies did over $609 million worth of business a year. They say that the companies had a virtual nation-wide monopoly in the manufacturing and selling of these electrical products.

The suits also list fifteen co-conspirators with the defendants.

Texas

Rate Hike Threatened in Suit

A WARNING that it will have to increase rates in other Texas cities it serves if forced to give up its San Antonio franchise was given by United Gas Pipe Line Company in a brief filed in district court in Austin.

The company differed with State Attorney General Wilson, the city of San Antonio, and Alamo Gas Supply Company, which contended that rates to be charged by United in other places would not be affected by the San Antonio dispute.

United contends that failure of the state railroad commission to "exercise complete jurisdiction over gas pipelines will affect the cost of gas to consumers throughout the state."

The pipeline company filed the court suit in an effort to make the commission review its plea to set aside an agreement under which its long-time contract to supply gas to the city of San Antonio would end next April 1st.

Test of New Natural Gas Tax Slated

A HOUSTON oil attorney, Lee Hill, said recently the legality of the new state tax on natural gas would be challenged. Lee said he was confident "there will be court challenges."

The tax package passed by the July special session of the state legislature included provisions designed to tax gas reserves dedicated to fill the long-range requirements of transmission companies delivering Texas gas to other states. Bills aimed primarily at taxing exported gas were passed in 1952 and 1958 but were held unconstitutional by the Texas supreme court.

Hill, associate general counsel of the southwest region of Humble Oil & Refining Company, Houston, and chairman of the legal and tax committees of the Texas Mid-Continent Oil and Gas Association, predicted most payments of the new tax will be made under protest until the question of constitutionality is settled.

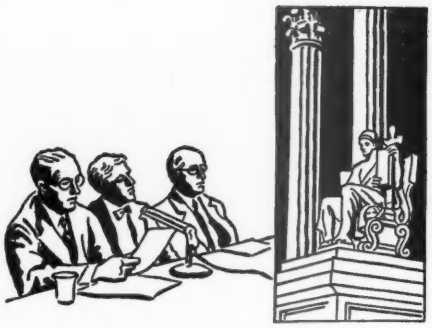
Virginia

High Court to Decide Gas Case

IT is now up to the United States Supreme Court to decide if Harrisonburg and northern Rockingham county are to have natural gas service from the Blue Ridge Gas Company, as ordered by the Federal Power Commission.

The Virginia Petroleum Jobbers' Association has been contesting the natural gas allocation to Blue Ridge since 1958 when the FPC gave its first favorable report. In the same year, the Virginia Corporation Commission granted a certificate of necessity to Blue Ridge.

The U. S. court of appeals in the District of Columbia affirmed the FPC order in June. The Jobbers Association is asking the highest court to review the order. If the court declines, Blue Ridge may proceed with its pipelines. If the Supreme Court decides to review the case, it means another hearing. The association contends a gas franchise is not economically feasible and no need exists for it. Blue Ridge has gas contracts with the Harrisonburg Electric Commission to operate the diesel generators to produce electricity and with large food-processing plants in the Broadway-Timberville area.



Progress of Regulation

Trends and Topics

Omission of Rate Base Determination

As explained in a discussion of the rate base theory in 60 PUBLIC UTILITIES FORTNIGHTLY 1033 (December 19, 1957), rates are ordinarily fixed by determining a rate base and applying a reasonable rate of return to the amount determined, but there are exceptions in some cases. The futility of expending time and money to determine a rate base when a company is operating at a loss, or very close to the line between profit and loss, is evident, as noted in several recent decisions by courts and commissions.

The necessity of determining a rate base, as well as other evidence ordinarily used in fixing rates on the basis of cost of service, is also involved in rate fixing for natural gas producers under the jurisdiction of the Federal Power Commission, but that goes into questions distinguishable from those involved in ordinary rate making by state commissions.

Reasons for Omitting Rate Base Findings

The Wyoming commission, in authorizing a rate increase for a telephone company, said that while it is the general procedure to start with a rate base, develop acceptable income and expense items, and adjust rates so as to allow a fair return, this was unnecessary when it was apparent that the requested increase would do little more than offset the company's present operating deficit. In this case, moreover, an accurate determination of the original cost of plant facilities acquired before 1957 was not possible because of the inaccuracy and unavailability of records (39 PUR3d 386).

The New York commission had before it a case involving a rather unusual situation in which the reasonableness of charges could not be determined with reference to a return on a rate base. The company, according to the commission, was entitled to be paid for operating and maintaining an aerial cable and related equipment to carry television signals for community antenna television companies. The telephone company required the antenna companies to deposit an amount equal to the construction cost (34 PUR3d 115).

The District of Columbia commission, in examining rates of a transit com-

pany, said that the gross operating method should be used in measuring the rate of return in accordance with legislative policy set forth in a franchise act where the company had complied with the intent of the act and the conditions set forth by the commission as warranting use of such a rate-making method. The commission said further, however, that the rate base-rate of return method should be used to test the reasonableness of the rate of return computed under the gross operating revenue method (38 PUR3d 19).

The Georgia commission authorized a rate adjustment to cover increased costs of a gas distributing company, after wholesale gas rate increases had gone into effect, without determining a rate base or a rate of return. Due consideration was given to revenue requirements of a company of the size and operating characteristics of the applicant. Allowance was made for operating expenses, depreciation, and taxes (33 PUR3d 71).

A rate increase proposed by a water company was approved by the Louisiana commission without the determination of a rate base where the end result was sufficient to meet the company's earnings requirements based on annual amounts necessary to service the debt and provide a reasonable return to equity holders (26 PUR3d 549).

No determination of a rate base or rate of return may be necessary where proposed increases would not afford sufficient revenue to meet out-of-pocket costs (Fla 32 PUR3d 432).

Losing Operation Theory

The New Jersey commission, adhering to the principles previously expressed, said that in fixing railroad passenger fares it is not free to make a determination without the establishment of a rate base and proof of the reasonableness of expenses unless it can be shown that the case in question is one of those in which the "losing operation" theory may be tenable. Under the operating loss theory confiscation is the issue, and the utility has the burden of making a convincing showing that the amounts it has charged to operating expenses have not been excessive (21 PUR3d 317).

The commission says it may not rule upon a level of railroad rates in the absence of evidence of a rate base which is supported by sufficient detail to establish its accuracy and suitability (33 PUR3d 500).

Review of Current Cases

Differential for Gas Company Return Rejected and Rulings Made on Lost Sales and Other Questions

THE West Virginia commission was faced with a novel approach to rate making when the Hope Natural Gas Company requested that it be allowed a 10 per cent rate of return on well-mouth properties and 6.75 per cent on all other property. The justification asserted for the differential was that, by virtue of the

increasing cost associated with the purchase and transmission of certain gas, the company should be encouraged to increase the tempo of exploration and development in other fields by the added incentive incident to a higher rate of return on such investment.

The idea, noted the commission, carried some conviction, and if Hope was primarily an independent producer whose dry holes were total losses it would have been even more convincing. But such was not the case. In prior rate cases, the company had always been allowed, as part of its cost of service, its exploration and development costs irrespective of whether such costs had resulted in the addition of productive wells. The company's customers, through rates paid in the past, had enabled Hope to carry on its activities in prospecting for gas with no loss on account of nonproductive wells drilled as a part of such activities.

In point of fact, the commission knew of no instance, and no cases had been cited by the company, in which anywhere near a 10 per cent rate of return had been allowed on well-mouth investments by any regulatory authority except to independent producers who had no way of recovering dry hole costs except by increased rate of return on productive wells. Therefore, in calculating the return, the commission made no distinction between the classes of property included in the rate base. A 6.40 per cent return on the company's average net original cost rate base was considered reasonable, and the company was directed to refund excess rates collected under bond.

Lost Wholesale Sales

During the test period, two of the company's wholesale customers had been lost. Certain of the industrial protestants contended that the volumes represented by such lost sales should not be eliminated from the test-year figures. In support of such position, they produced evidence that Hope's sales had historically increased from year to year, and projected that Hope would be able to find other purchasers who would absorb the volumes lost. An assumption that the sales would continue, or that the volumes covered by such sales would be absorbed by other comparable sales without additional expenditures, countered the commission, was an assumption that could not be made. It is incumbent upon a regulatory tribunal to render decisions in the light of facts as they exist at the time of such decision, when they are known, rather than to engage in speculation as to the state of such facts in the future or to adhere rigidly to what they have been in the past.

The commission, therefore, found that in calculating Hope's cost of service the sales to the two lost customers and the revenues associated therewith should be eliminated, and that the commodity cost incident thereto should also be eliminated, plus a proper reduction made in expense for the cost of operating and maintaining measuring stations used to serve such customers.

Unprofitable Out-of-state Venture

In recent years, Hope has been engaged in the exploration and development of certain gas properties in the state of Louisiana, has entered into contracts for the purchase of gas from other Louisiana producers, and has constructed in that state certain gathering facilities for handling the gas, which volumes were transported and delivered to Hope or its affiliated companies north and east of Hope's West Virginia facilities, completely bypassing the same. The cost of the gas purchased in Louisiana was high and the venture, to date, had proved unprofitable.

Hope, in computing its cost of service, had eliminated the Louisiana property and the operating expenses of the Louisiana venture and had likewise eliminated volumes of Louisiana gas in computing the allocation factors between the West Virginia jurisdictional and interstate wholesale sales. No exception had been taken by protestants to the elimination of the property and operating expenses of the unprofitable venture. It was contended, however, that the volumes of such gas should have been included with interstate sales in computing allocation factors.

The commission found no justification for eliminating the one without eliminating the other. It is within the very nature of things, pointed out the commission, that we cannot have our cake and eat it as well.

On the accounting matter related to Louisiana gas, however, the commission took no exception to the company's procedure. The company had averaged the higher costs of Louisiana gas with other costs in pricing gas into storage, resulting in a credit to, and hence a reduction in, the cost of service. The commission, although allowing this, reserved the right to take appropriate action in future rate proceedings.

Effective Federal Income Tax Rate

For a number of years, it had been the practice of the parent company of which Hope was a subsidiary to file a consolidated federal income tax return for all the companies in the system, the objective being the reduction of the federal income tax liability of each. There was necessarily some delay in the filing of such a return and the determination of the effective rate for federal income taxes for the year 1960, which return had not yet been filed at the time of the rate proceeding.

Hope originally contended for an effective rate of 50.5 per cent. The protestants had taken the position that a 49.9 per cent rate was proper and the staff used an effective rate of 50.3 per cent. Hope, in calculating its cost of service, included as a deduction for computing federal income tax, interest on its Louisiana investment, while such properties were excluded from the rate base. The commission used the staff's figure of 50.3 per cent as the effective rate in calculating Hope's federal income tax liability.

Attrition

The commission, as it had done in a previous case (33 PUR3d 335), made an allowance for attrition, using the same formula developed in the prior case. The allowance was made in order to compensate for the effect of attrition upon the amount ultimately realized from the revenues received. The method developed was through the use of net additions to distribution property only, rather than the total net additions for the test years.

Supplier Refunds and Reductions

The company was directed to report all refunds or reductions in rates from suppliers, regardless of whether they had been the subject of a proceeding under a commission rule relating to accelerated rate procedure for gas utilities. The purpose of the rule was to permit gas distribution companies to recoup increased gas purchase costs as soon as they were incurred and paid, subject to refund pending the final determination of the propriety thereof by proper regulatory authorities.

The rule limited the issues by which they could be placed in effect to the ones set forth therein, thus precluding inquiry as to whether or not the companies incurring such costs were in a position to absorb the same, and as a concomitant to

such limitation of the issues in the event that refunds and reductions resulted from the final decision of the regulatory body which was the instrumentality by which such increased costs were placed in effect in the first instance.

To permit a gas distribution company to obtain the advantages of the rule in placing such higher gas purchase costs in effect in the first instance and to avoid the disadvantages (limitation of issues in the event of refunds and reductions) by a general rate case resolved by the commission before final determination of the propriety of such increased gas purchase costs by the regulatory tribunal having jurisdiction thereof would be to defeat the purpose of the rule, the commission felt. *Re Hope Nat. Gas Co. Case No. 5243, September 1, 1961.*

Statutory Penalty for Denial of Service Repealed by Implication

THE Nevada supreme court reversed a judgment of a lower court awarding a $2,000 penalty against a telephone company for failing to grant a customer's request for service. Under a 1913 Nevada statute, if a telephone company refuses, after a period of thirty days, to furnish telephone service to an applicant who owns or occupies premises within 200 feet of a telephone wire, the company must pay to the applicant $50 as liquidated damages, and $5 per day as liquidated damages for every day such refusal or neglect continues. The plaintiff, though meeting the conditions of the statute, was denied service and later obtained judgment for the statutory penalty.

A 1919 statute creating the public service commission grants "full power" to prescribe classifications of service and fix and regulate utility rates. The high court held that the 1913 statute was necessarily inconsistent with the 1919 legislation and that the latter, by necessary implication, repealed the former. The grant of "full power," said the court, cannot reasonably mean a limited or restricted power. It cannot mean, as contended by the plantiff, full power to classify in all cases except the case involving an owner or occupant of property within 200 feet of a wire. A statute establishing a comprehensive plan for regulating a particular subject matter repeals, by necessary implication, an earlier law dealing with but a small part of the same subject matter. *Southern Nevada Teleph. Co. v Christoffersen, 363 P2d 96.*

Overall Financial Effect Required to Be Shown In Service Discontinuance Case

THE Florida supreme court upheld a commission order denying the Greyhound Corporation permission to discontinue certain schedules between Cedar Key and Gainesville. Although the affected area afforded the company less than one passenger per day, the evidence indicated that five communities would be left without any public transportation if the company were permitted to discontinue its service. Moreover, the company's evidence was inadequate to meet its burden of showing a material adverse effect on its overall operations. It is fundamental in these cases, said the court, that, in order to abandon such a public service,

it is necessary to show not only that such facility is operated at a loss but that such loss affects substantially the overall operation of the company.

There was substantial evidence indicating that other communities would be adversely affected by the abandonment. While this fact would not be determinative of the cause, the court noted that it adds weight to the conclusions of the commission that the public convenience requires the continuance of the service from Cedar Key to Gainesville.

Concurring Justice Questions Rule

Justice Hobson, though concurring in the result, objected to the majority's view that it is necessary for the company to show that its loss affects substantially its overall operation. Such a rule, he said, is an innovation in the law of the state of Florida.

He suggested the true rule as follows: (1) Where reasonable public necessity demands continuance of a particular local service which is being rendered by a carrier at a relatively small financial loss, the carrier will not be permitted to abandon or curtail such service if its entire system has substantial net earnings over all operating expenses; (2) but if the operating losses suffered in rendering the particular local service are grossly disproportionate to the public convenience and necessity in regard to the service in question, then abandonment of such service should be permitted, notwithstanding the fact that the carrier's overall operation is enjoying substantial profits. *Greyhound Corp. v Carter et al. 131 So2d 735.*

Rate Condition in Temporary Gas Producer Certificate Upheld

THE U. S. court of appeals for the third circuit upheld the authority of the Federal Power Commission to attach a price condition to a temporary certificate granted to an independent gas producer pursuant to § 7(c) of the Natural Gas Act. The producer, J. M. Huber Corporation, owned acreage in the Laverne field, located in the Oklahoma Panhandle area. After contracting to sell gas from this area to Michigan Wisconsin Pipe Line Company, it applied to the commission for a certificate. Simultaneously it also applied for a temporary certificate.

In doing so, Huber tendered as its rate schedule the contract with Michigan Wisconsin, which provided for a price of 17 cents per Mcf plus one cent for each Btu in excess of 1,000 Btu content per cubic foot. The commission granted Huber the temporary authority, subject to the condition that the upward Btu clause be eliminated pending ultimate determination of the rate in the final hearing. The court held that although § 7(c) does not specifically permit the commission to condition the issuance of temporary certificates, that power has been held to be implicit in its language.

The court disagreed with Huber's argument that the commission's action in granting a temporary certificate under § 7(c) must be circumscribed by all the standards imposed by the various sections of the act. It said that by its very nature the issuance of a temporary certificate under § 7(c) is a summary matter, an emergency provision, and that under it the commission has discretion to either grant, grant conditionally, or deny applications for temporary certificates.

Unlike the other sections of the act, this section contains no specific standard that the commission must follow in fixing rates. Its discretion, however, is not unfettered. It is always subject to judicial review, and where the commission acts arbitrarily, capriciously, or contrary to the avowed purpose of the act, judicial intervention is warranted.

Effect of Price Policy Statement

The court also held that the conditioning of Huber's temporary certificate by eliminating the Btu adjustment clause from its contract with Michigan Wisconsin was in accord with the commission's Statement of General Policy No. 61-1 issued on September 28, 1960, 35 PUR3d 195. The elimination of the Btu adjustment from the price as allowed under the temporary certificate was merely the necessary follow-through on the established price policy for the particular gas field involved.

The court believed that it was required to accept this price policy statement if it was reasonably supported in the record. It pointed out that Huber sought emergency relief through a temporary certificate to prevent probable drainage of the reserves involved. At the time the certificate was granted the new price policy relating to the Oklahoma Panhandle area was in effect and was consequently reflected in the certificate condition.

The price policy was arrived at after consideration of cost information, existing and historical price structures, volumes of production, trends in production, price trends in the various areas over a number of years, trends in exploration and development, trends in demands, and the available markets for the gas. In this statement the rule was laid down that the price levels determined were for the purpose of guidance and initial action by the commission, and their use would not deprive any party of substantive rights or fix the ultimate justness of any rate level. It also made plain that proposed initial sales of natural gas by independent producers, which included rates higher than those indicated in the statement, should be denied a certificate or certificated only upon the condition that lower rates be filed, and that all rate changes filed under existing contracts which call for a rate exceeding the indicated price level should be suspended.

Huber argued, however, that the striking of the Btu adjustment was inconsistent with other certificates issued and amended contracts approved in the Laverne field. The court conceded that prior to the issuance of the policy statement the commission had granted certificates and approved contracts in the Laverne field containing Btu adjustments. But, it said, this practice came to an end with the policy statement. Its discontinuance was an integral part of the commission's endeavor to limit the rise in gas prices.

Furthermore, since that time certificates granted in that field, both temporary and permanent, covering an initial rate have not contained Btu adjustment provisions. The court believed that the commission acted responsibly and commendably in the public interest.

Huber is receiving the highest allowed initial rate for new sales of gas in the Panhandle area. The court said that there was at least the serious challenge by the commission respecting the Btu content of the gas involved, whether the clause was operating and, if so, the extent of its operation. These items, said the court, and the important general questions of whether such clauses are advisable at all, and, if so, under what conditions, can be developed at final hearing. It was not in-

tended to attempt to pass upon them at this preliminary stage and, in fact, it would be impossible to do so, according to the court. *J. M. Huber Corp. v Federal Power Commission, No. 13,535, June 23, 1961.*

Depreciation of Motor Vehicles

THE Wisconsin commission denied a transit company an emergency increase in fares. The commission was of the opinion that the company improperly computed depreciation on motor vehicles, having short lives. Depreciation had been taken on a group basis, whereas the commission thought it would be better to accrue it on a unit basis.

If this were done, a reduction of $200,000 or more in depreciation charges would be realized. With such adjustment, net operating income would be increased, and would be adequate to cover fixed charges and provide a return on common stock equity. *Re Milwaukee & S. Transport Corp. MC-1670, 2-SR-4027, July 27, 1961.*

Competitive Carrier Authority Properly Granted Where Union Pressure Interfered with Existing Service

A U. S. district court ruled that the Interstate Commerce Commission was justified in granting competitive motor carrier authority where existing carriers, because of union pressure involving a "hot cargo" contract clause, failed to render adequate service to the shipping public. Interstate trunk lines had refused transportation, disregarded routings, routed by carrier and rail where no joint truck-rail rates were in existence, all with additional expense to shippers. Because of the interstate carrier service inadequacy, the service of several nonunion Nebraska motor carriers was impaired in the handling of interstate shipments. However, as the commission found, at no time was the boycott against the nonunion Nebraska carriers entirely effective since interchange with the larger unionized carriers was never completely shut off.

Stockholders of these intrastate carriers formed a company to provide the service which was being withheld, and they sought the requisite competitive authority from the Interstate Commerce Commission. The commission determined that one effective method of correcting the situation was by granting the requested authority, pointing out that the commission is charged with the duty of procuring such additional facilities as may be necessary to carry out the purposes of the national transportation policy.

The court observed that the commission has broad discretion in determining the issue of public convenience and necessity under the Interstate Commerce Act. The matter requires the exercise of the commission's expert judgment. The court held that the commission's order was sufficiently supported by evidence that the service of the existing carriers was inadequate and that the competitive service was granted in the public interest.

Question of Labor Dispute

A complaining carrier, arguing against the grant of competitive authority, contended that there was a labor dispute which the commission had no power to

adjudicate. The dispute, it was said, should be submitted to the National Labor Relations Board. The court indicated, however, that there was no labor dispute between employer and employee here. It was, rather, pressure brought to bear on the interstate carriers by the labor union to force a union shop contract upon the Nebraska carriers.

The union had been unable to secure recognition by the Nebraska carriers by reason of their employees refusing to accept the union as their bargaining agent. The interstate carriers simply went along with the union and did not require their employees to perform the service that the carriers were required to render under their certificates. Their inaction led to a public demand for additional service.

Commission Powers

The court recognized that the commission does not have jurisdiction to consider the legality or propriety of labor agreements or to adjudicate labor disputes. Nor does it have authority to issue a certificate as a penalty against existing certificate holders. But the commission does have jurisdiction over the actions of carriers in relation to their obligations under the Interstate Commerce Act. The court dismissed as being without merit a contention that the competitive authority issued in this case constituted a penalty.

Excuse for Service Failure

Labor disappointments, such as those involved here, said the court, do not constitute a valid excuse for motor carriers to refuse to pick up and deliver shipments tendered to them by shippers who are experiencing labor troubles and whose plants are picketed. Nor may the carriers refuse to interchange shipments with other carriers which are not unionized or engaged in labor controversies with their employees.

When existing motor carriers fail for any of these reasons to perform their obligations to shippers and other carriers, the commission is bound to insure adequate motor carrier service through the grant of additional carrier certificates, as was done in this case. *Burlington Truck Lines, Inc. v Interstate Commerce Commission et al. 194 F Supp 31.*

Wage Increases after Test Period Disallowed

THE Ohio commission denied a telephone company's request for annualization of a wage increase that went into effect four months after the end of the test period. The commission pointed out that changes in both expenses and revenues would occur almost continually after any date or period of time chosen for the testing of rates. Reaudits to determine the effect of all such changes would unduly lengthen the regulatory process and may well, especially in periods of inflation, unnecessarily burden the utility industry.

On the other hand, to allow a selection of those changes that tend to be favorable to the viewpoint of any one party could have the effect of distorting the results.

Stipulation

The commission stated that it was not bound by a stipulation entered into between the parties with regard to the rate increase. The commission held that a return of 6.35 per cent on the reproduction cost new less depreciation rate base was reasonable and, in arriving at the dollar amount necessary to produce such a return, authorized the company to file rates which would produce 61 per cent less than

the telephone company had originally requested.

The company had originally requested rates that would produce an annual increase of $114,000 in local service revenues, an increase of 57 per cent. During the course of the hearings, the company had entered into stipulations with representatives of subscribers which provided for rates that would result in an increase in local service revenues of about $82,700, an average increase of 41 per cent over present rates. The commission authorized an increase of about $44,600, an average increase over present rates of 22 per cent.

"Write-up" of Pole Line Account

One of the issues revolved around a difference of opinion as to the proper treatment of a "write-up" by some $70,000 of the stated valuation of pole line property. The company's witness had made no modification of the usual practice of deducting gross additions by years backward in time until an account is exhausted. The method utilized by the witness, deducting gross additions back through 1943, resulted in more than 30 per cent of the total book cost of the property in that account remaining. The witness assumed that the dollars in the account at the end of 1942 were put on the books equally over the years 1933 to 1942 and, therefore, applied a conversion factor to those dollars that was an average of the conversion factors applicable to the ten-year period.

The commission staff took the position that the main reason for the "write-up" of the pole line account as of 1947 was because additions prior to that date were recorded at values substantially too low. Accordingly, the staff increased the book amounts of the additions in the years prior to 1947, which resulted in the balance in the account being exhausted by 1945.

The staff's treatment was considered more reasonable and accepted by the commission.

Right of Way

The company objected to the elimination of an allowance for right of way in its reproduction cost new valuation estimate. The evidence showed, however, that the company had built considerable quantities of plant during the past ten years without buying right of way, justifying the exclusion.

Statutory Interest

The company also objected to the use of statutory interest rather than actual interest in the determination of the allowable federal income tax expense. The company claimed that so-called statutory interest was a concept to be used in determining the rate of return, not the cost of rendering service.

The commission disagreed. The use of statutory interest, it said, is in accordance with court precedent. If a company would pay more or less interest than it pays on its debt, the greater or lesser amount of interest that such a company would so pay should, in a rate proceeding, be used as a factor in determining the income tax liability that such a company would have.

Miscellaneous Matters

No allowance was made for cash working capital since tax accruals were considered sufficient to offset the need for such an allowance. The commission directed that the company amortize rate case expense over a five-year period rather than a three-year period advocated by the company.

In allocating the gross annual revenues, the commission commented that the exercise of informed judgment was required, directed to the best interests of the public generally. Such judgment should be based

on many considerations, including the cost associated with accounting procedures to calculate, bill, and collect rates and charges from the subscriber. Subscribers should not be burdened with excessive expenses attributable to apportioning cost with an "extreme nicety" to determine the portion thereof assignable to each subscriber receiving each type, grade, and class of service. *Re Chardon Teleph. Co. Case No. 29,740, September 14, 1961.*

Overhead High-voltage Line Not Shown to Be Hazardous

COMPLAINT was made to the Pennsylvania commission that an electric company proposed to install an overhead, high-voltage electric transmission line along a road immediately adjacent to a school and parish property. It was contended that this location would constitute an unnecessarily grave threat of danger and physical harm to schoolchildren and parishioners and would constitute a taking of complainant's property without due process of law. The commission dismissed the complaint on the ground that it had not been adequately supported by the testimony of record.

The company's engineer testified that the route selected for the line was the most direct, logical, and reasonable of several routes studied, and its decision to install overhead pole line facilities was the result of extensive studies by engineers of the nature of terrain, the semi-rural character of the neighborhood, the traffic and population density, the nature and uses made of the abutting properties, and the possible need for additional utility lines along the road.

The line was located entirely on 22 abutting properties, the owners of which had granted rights to install the line over their properties, but along the parish property the line was installed on poles and post-type insulators located entirely within the legal right-of-way limits of the road pursuant to highway occupancy permits issued by the State Highway Department. There was testimony that underground construction of one and one-half miles of line would cost $350,000, whereas the existing line was constructed at a cost of $50,000.

No Taking of Property

The commission noted that the company had completed construction of the overhead line entirely within the legal right-of-way limits of that portion of the road abutting the complainant's property. Accordingly, occupancy of the public highway by the overhead facilities constituted no unlawful taking of the complainant's property as averred. The public location of the overhead facilities, by permission of the State Highway Department, effectively removed from the complainant's control any matter relating to the operation and maintenance of such facilities.

As long as public utility operations are conducted with reasonable diligence and consideration so as not to adversely affect the safety and convenience of the traveling public and others utilizing the road, the electric company may not be required to remove or modify its facilities without a proper showing that continued occupancy will result in unsafe or hazardous conditions contrary to the public interest.

Threat of Danger and Physical Harm

On the question of the line being an unnecessarily grave threat of danger and

physical harm to schoolchildren and parishioners, it was noted that the record included no expert testimony on behalf of the complainant relative to the technical safety of the facilities. The complainant's position was that the overhead line might be safe but that an underground line would provide the safer type of construction at this location.

The line in front of the parish property had been designed, constructed, and was operating under safety criteria more stringent than the installation and maintenance standards prescribed by the National Electrical Safety Code. The company engineer said that an overhead line installed in accordance with the provisions of the code is clearly and definitely a safe installation and that such overhead facilities are considered to be equally as safe as an underground line from the standpoint of the public. The record indicated that although overhead facilities are subject to failure for various causes, such failures are infrequent, and they had not occurred on any lines operated by the company adjacent to or over properties occupied by schools, playgrounds, and churches.

The commission said that over the years it has recognized that the provisions of the National Electrical Safety Code constitute reasonable standards of safe construction and maintenance practices which have received universal acceptance throughout the electric utility industry. The commission was cognizant that a certain degree of hazard to public safety exists under or near all electric lines and that such hazard cannot be entirely eliminated in all cases, but may be largely minimized.

There was said to be no doubt from the record that the complainant's action was compelled by the finest of motives; namely, the welfare and safety of the schoolchildren and the members of the parish. The commission, nevertheless, was of the opinion that the distribution line along the parish property did not present an unreasonable hazard to public safety by virtue of its overhead location. *Larkin v Philadelphia Electric Co. Complaint Docket No. 17472, August 28, 1961.*

Electric Company May Extend Lines Despite Contract Restricting Competition with Co-operative

THE North Carolina supreme court affirmed a lower court judgment which refused to enjoin an electric company from extending its lines into territory contested by an electric co-operative. The parties are free to compete in rural areas in North Carolina unless they have voluntarily restricted their rights by contract. Several years ago they entered into a contract which prohibited duplication of facilities and provided that neither party would serve an applicant who could be served by the other from existing facilities or extensions not exceeding 300 feet.

The high court agreed with the trial judge that the electric company was not precluded by this contract from extending its facilities and furnishing electricity to a new subdivision which was more than 300 feet from any of the co-operative's facilities. The court interpreted the contract as prohibiting competitive service within 300 feet from existing lines of either party and as prohibiting the construction of facilities in this area except when necessary to provide service beyond its limits. *Pitt & Greene Electric Membership Corp. v Carolina Power & Light Co. 120 SE2d 749.*

Order to Install Water Meters Upheld Along with Tax Allowance Involving Rapid Depreciation

THERE was nothing unreasonable in the California commission's order requiring Dyke Water Company to convert from flat rate service to metered service and to commence forthwith to install 400 meters a month, the California supreme court ruled on petition by the company for annulment of the order. Nor was it unreasonable to require the company to bear the cost of installation of the meters rather than imposing the cost on ratepayers.

The commission had long before ordered the company to set up a procedure for converting to metered service, and apparently only a token effort had been made at conversion. Three years passed and Dyke offered no plan of its own for conversion. Under California law, the commission plainly has authority to require metered service in order to prevent waste and discrimination.

On the question of paying for the meters, the court observed that it would not be proper to impose upon the ratepayers the double burden of providing the capital cost of the meters and then paying a return on the capital. Furthermore, the evidence indicated that manufacturers would compete to install the meters and would offer favorable credit terms.

The company, which takes accelerated depreciation and enjoys a tax advantage under federal law, objected that the commission allowed as a rate-making expense, subject to final determination of the problem later, the amount of federal income tax which would be payable if straight-line depreciation were used. Dyke complained that this action of the commission was uncertain and unclear in that "it is impossible to ascertain therefrom the effect of present and anticipated federal income taxation on petitioner's revenues."

The court, on the other hand, was uncertain what the petitioner meant, observing that nothing the commission says can affect the company's obligation to pay its taxes. In any event, it was pointed out, the commission's allowance of the larger tax which would result from straight-line depreciation redounded to the company's advantage.

Confiscation Claim Erroneous

The court rejected as erroneous a claim that the rates allowed by the commission were confiscatory. It appeared that they will produce a rate of return of more than 7 per cent on a depreciated rate base. *Dyke Water Co. v California Pub. Utilities Commission et al. 14 Cal Rptr 310.*

Hearing Necessary to Increase Broadcasting Power

A FEDERAL appeals court ruled that an unconditional permit granted by the Federal Communications Commission to a radio broadcaster to increase its power in presunrise operations constituted a modification of another broadcaster's license so as to require a hearing. It was conceded that the increase in power would unduly interfere with the other broadcaster's protected contour.

The hearing was required even though the increased power might not be used before sunrise and notwithstanding that the commission purported to reserve the right to restrain undue interference. *WBEN, Inc. v Federal Communications Commission, 290 F2d 743.*

ICC Justifiably Declined to Correct Certificate Revocation Error

THE U. S. district court has held that, although the Interstate Commerce Commission has the power to correct a certificate revocation order, if based on inadvertence or mistake, and to alter or terminate rights which are extant or which have been revoked or should have been revoked, it is not under a legal obligation to do so.

The case arose out of a peculiar set of facts. Originally, a motor carrier had petitioned for revocation, and after hearing the commission had issued its order. It subsequently appeared that the commission order had only canceled rights held under the lead docket number and that the carrier had continued to operate within the limits of authority contained in the original subdocket number.

The two competing carriers involved in the instant case had petitioned the Interstate Commerce Commission to issue an order declaring that the entire operating authority had been revoked. Upon denial of the request, an appeal was taken.

Appellate Standing

The fact that the two carriers appeared and participated in the proceedings before the commission was not determinative of their standing to maintain the appeal. It is a recognized principle that the judicial power may not ordinarily be invoked by one whose rights are not affected. The two carriers had not shown that their rights would be adversely affected by the commission's order. Therefore, they had no standing to sue.

Original Request Withdrawn

Nevertheless, the court did not rest its decision solely on that point, but held that, on the merits, the complaint should be dismissed. The commission, said the court, had justifiably found that, although the carrier had originally intended to request revocation of its entire operating authority, it had not actually requested the same. Under the circumstances, complete revocation was neither warranted nor proper.

The petition, as it had been filed, regardless of intent, had requested only revocation of the lead docket number. A proper order had been entered to that effect, involving no ministerial or administrative error. The carrier was not presently requesting revocation or cancellation of its remaining authority. There was no legal authority by which the commission could revoke or cancel a duly issued permit on the basis of the petitions of competing motor carriers.

Scope of Review

Even assuming that a legal request had been made for revocation of both permits, the court said, the commission properly found that it had been subsequently withdrawn. Even if the commission had committed inadvertent error, it could certainly correct itself, but it legally and justifiably declined to do so.

The revocation of operating authority previously issued to a motor carrier, pointed out the court, is within the exclusive province of the Interstate Commerce Commission. The general rule is that the judicial function is exhausted when there is found to be a rational basis for the conclusions approved by the administrative body. *E. Brooke Matlack, Inc. et al. v United States et al. 195 F Supp 399.*

Original Cost of Water Plant Determined

On its own motion the Missouri commission ascertained the original cost of the plant of Capital City Water Company. The calculation was based on a detailed inventory of the physical property, which was priced at costs secured mainly from the company's actual construction records. When recorded costs were not available they were estimated. General overheads that had not been capitalized and properly identified in the company's records were disallowed.

Also disallowed was a 10 per cent contractor's profit paid by the company in connection with the construction of a filter plant. It appeared that the contracting company was organized by the owners and employees of the water company, who received full salary from the water company during the construction period and who were entirely capable of handling the construction project.

The company was ordered to discontinue its practice of adding 5 per cent to all construction expenditures (except purchases of complete units of equipment) to cover local management supervision, purchasing, cost of office records, etc. The company was ordered to account for such costs in accordance with the applicable Uniform System of Accounts for Water Utilities.

Depreciation Theory

The commission rejected the company's proposed remaining-life theory of depreciation. Water utility depreciation rates, it was pointed out, are to a large extent a matter of judgment. They should be established for each company and should reflect conditions that exist in that company. The engineering staff's recommendation of depreciation rates was adopted. They result in a composite depreciation accrual rate of 1.44 per cent. The company was required to establish and maintain its reserve for depreciation by primary plant accounts. *Missouri Pub. Service Commission v Capital City Water Co. Case No. 14,178, August 17, 1961.*

Other Recent Rulings

Scope of Judicial Review. The Oregon supreme court, in reviewing an order of the commissioner (involving assessment of a tax on a motor carrier rather than regulation), stated the rule that where the commissioner has made sufficient findings of fact and conclusions of law the courts may enter a final decree and are not limited to a remand to the commissioner. *Mitchell Bros. Truck Lines v Hill, 363 P2d 49.*

Return on Deferred Taxes. In determining an allowable rate of return for a natural gas pipeline company, the Federal Power Commission treated the amounts accumulated in the deferred tax account as a part of the capital structure of the company at a one and one-half per cent rate of return. *Re Ohio Fuel Gas Co. Docket Nos. G-16818, G-18423, G-20273, July 28, 1961.*

Written Report Not Required. The Massachusetts supreme court held that the failure of a hearing officer to make a report in writing in a certificate amendment proceeding did not prejudice any

substantial rights of any party where no issue of fact depended upon the credibility of witnesses and where it was not contended that the commission's decision was unsupported by substantial evidence. *Fortier v Massachusetts Dept. of Pub. Utilities et al. 175 NE2d 495.*

Capitalization Affects Return Allowance. In allowing a water company a rate of return of 6 per cent on a fair value rate base, the Pennsylvania commission took into account the small size of the company and the fact that its capitalization was represented entirely by common stock. *Pennsylvania Pub. Utility Commission et al. v Honey Brook Water Co. C 17497 et al. July 24, 1961.*

Operation at Loss: The Pennsylvania commission granted a fare increase to a transit company upon a showing that, despite the institution of operating efficiencies, the company was still operating at a loss. *Pennsylvania Pub. Utility Commission v Erie Coach Co. Complaint No. 17608, August 7, 1961.*

Tax Adjustment for Expense Allocation. Where a water company sustained 55.6 per cent of the expense of a reservoir which it shared with a subsidiary, the New Jersey department was required to adjust the company's income tax, for rate-making purposes, on the basis of the expense allocation. *Re Hackensack Water Co. Docket No. 566-9473, August 10, 1961.*

Standpipe in Zoned Area. The New Jersey department found that the construction of a standpipe and related facilities required by a water company was reasonably necessary to adequate public service where the proposed site was the most feasible location and where residents opposing the construction offered no adequate and dependable alternate proposal. *Re Middlesex Water Co. Docket No. 614-285, August 10, 1961.*

Return for Water Company. The New Jersey department allowed a small water company a rate of return of 6.2 per cent on a net investment rate base. *Re Crosswicks Water Co. Docket No. 615-406, August 10, 1961.*

"Exclusive" Certificate. An "exclusive" certificate granted to an electric company, the Colorado commission pointed out, does not mean that no other public utility under any circumstances will ever be permitted to serve a part of the designated area, for if the "exclusive" holder is unable to provide a particular service, such as high-voltage power, then a utility capable of providing it may be authorized to do so. *Re Sangre De Cristo Electric Asso., Inc. Decision No. 57043, Application No. 18647, August 17, 1961.*

Wage Increases Offset. The Minnesota commission authorized a telephone company to increase its rates in order to offset the effect of the 1961 amendment to the Fair Labor Standards Act, increasing the minimum wage. *Re Redwood County Teleph. Co. M-4739, August 28, 1961.*

No Need Shown. The New York commission, denying a request for household goods authority, commented that so-called requests for service, which may be nothing more than inquiries as to charges and availability, customarily practiced by householders in search of a mover, do not, by themselves, show a need for a new operator. *Re Fitzpatrick, Case MT-8186, September 21, 1961.*

This was an additional address, delayed in reproduction, delivered before the Public Utility Law Section of the American Bar Association at St. Louis, Missouri, August 7 to 9, 1961. Other addresses before this group were reproduced as a special Appendix in PUBLIC UTILITIES FORTNIGHTLY, issue of September 14, 1961, pages 433-492. Special convention issues have prevented earlier publication of Dean Dunning's address.

Energy and Public Policy

BY JOHN R. DUNNING*

WE have heard a lot recently about the word frontier. It has been used, however, with more inspirational effect than, let us say, legal precision. Consider for a moment what a frontier is, and what it does.

The essential feature of a frontier is a border. It is a border between the wild and the domesticated, between the useful and the refractory, between the known and the hoped for. On the frontier, along the border, we have men. They are there not as sentinels but as daring invaders. They are acting, in the last analysis, not on orders but on private impulse—from dreams, from ambition, or even from greed. And these men possess (or at least we have a legend or hypothesis that they possess) certain qualities that we somehow associate with the conditions of a frontier—qualities of self-reliance, fortitude, indomitable optimism, the willing assumption of work and risk.

A moment's reflection shows us that these frontier virtues, where they exist, arise quite directly from the essentially voluntary and private nature of the frontiers—man's enterprise. It is easy to see why this is so, but it is easy to forget it, too. And many of us tended to forget it lately.

The national administration has recognized that we suffer nowadays from an abatement of the hardy pioneer virtues. I for one think the administration is quite right about this. We are certainly affluent. We are surely a little too devoted to comforts and reassurances, whether these reassurances come out of bottles or on analysts' couches or in official statements—and in official silences. We are somewhat disinclined to take risks these days, except perhaps the huge, fatal risk of inaction. We are, I believe, clearly too dependent on initiative from above, directives from above, and money from above. This applies equally whether we are talking about the railroads or about the energy industries.

WE are in danger—and I say this with all the studied conservatism of a man who has spent many years in the evaluation of technical proposals and intelligence reports—we are still in danger of drifting into an irretrievable flaccidity. The decisions that lie begging to be made are the measure of accumulating weakness.

I cannot come here and say to you that the situation is anything but grave. Of course, breast beating is also a facile substitute for hard, constructive action. We need some of the constructive stubbornness and the drive and the resourcefulness of the frontier, and, if we can recapture it, we can reassert our leadership on this planet. The national administration has, as I say, recognized this, but it is not clear whether this recognition is merely rhetorical or whether we are really going to have realistic substantive policy changes. Will we have a leadership that *tells* us we can beat the world but *acts* as if we could do nothing for ourselves? Or will we have a leadership that believes in the capacity of American citizens for voluntary constructive action—the capacity to sustain a frontier? Certainly, we do have a frontier. We have a frontier in space; we have frontiers in many domains, but the great contemporary frontier is an energy frontier.

THE energy frontier is not a new one, of course. It is ancient, and it is still un-

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conquered. Let us consider, in broad outline, the history of that frontier, so that we may understand its peculiar challenge at this moment. All of us, whether we are scientists and engineers or whether we are lawyers, must make sure that our technological and economic and regulatory practices meet this challenge, or else, with the best will in the world, we shall be engaged in mischievous irrelevancy.

Man began, like all the other animals, with a certain energy ration or resource—the power of his own muscles. Man is a fierce animal and a strong animal and a clever animal. But as long as he was primarily a device for converting the proteins and hydrocarbons that he ate into energy and using most of that energy to acquire more proteins and hydrocarbons, he was primarily just an animal. The moment he began to employ energy that was *not* his own, just at that moment he acquired a surplus that he needs to build a spiritual as well as a material culture.

THE history of human progress—whether we mean material progress, or progress in personal liberty, or progress in the range of our emotional and moral satisfactions—is a history of the use of energy sources in coarse form, doing heavy work, or sometimes in refined form as in communication. This history may be told in terms of the subduing of more and more energy resources. We started by subduing animal muscle power beyond our own, wind power, water power, chemical energy from combustion—these served the purposes of transport and tillage, comfort heating, food preservation, and the like. Devices for converting and applying energy—in other words, engines and machines—became more and more sophisticated, particularly over the last hundred years. We have seen the end of gang slavery, of serfdom, of the cottage industries in our part of the world. Elsewhere, of course, we see men in the animal power stage, with feudal institutions.

Each stage of development has its effect on the family group; our kinship groups have tended to lose their economic function; when a man and his wife and his sons and his oxen are no longer a production unit, an energy team, the whole concept of family life changes, and new motives—love, for instance—assume a new rôle. So the whole emotional and educational function of the family is based on the rôle of energy in our culture. We have seen the family farm begin to lose importance rapidly in these last decades in America, and we are just beginning to face the new political implications—implications that would have made Thomas Jefferson very anxious.

NOW the steam engine and the internal combustion engine, both based on fossil fuels, have been our pre-eminent converters of energy, and wherever the per capita consumption of energy has risen, the standards of health and comfort and personal opportunity have risen. But the characters of frontiers change with time. You remember Malthus' predictions that the population would always relentlessly increase up to the available food supply, so that mankind could never escape the specter of food famine. Our prodigal use of energy since the Industrial Revolution has tended to cover that basic truth. Only in the low-energy societies of the East could you see anything like the operation of the old Malthusian Law. But now once again, we find the future prospect of a world food famine growing more distinct, and behind it, an energy famine.

Many of you representing the coal, oil, and natural gas industries and the major user industries—such as the electrical industries, recognize, of course, that in this country, with its accelerating consumption of energy, the rate of discovery of new oil fields and thick veins of coal began to slacken and disappear some time ago. We have abandoned some wasteful practices and introduced much more efficiency—instead of burning natural gas at the wellhead, we pipe it into cities and even store it in wells. We engineers have been eying the vast oil shale deposits for some time; they are slightly below the economic point now, but at some stage we shall have to bring them in. It has begun to dawn on mankind that the world's fossil fuel reserves, by their very nature, are irreplaceable and are inevitably going to become more and more precious.

There have been cheerful prophets and gloomy prophets. In the oil and natural gas industries, geologists have come up with

a wide range of predictions on reserves; each year there seems to be more discovered, so that the reserves always seem to be a little bit ahead of us, and the prophets of doom have never been justified. Nevertheless, we have been exploring our planet only in patches—sooner or later, the rapid, almost violent industrialization of other parts of the world will catch up with the exploration of those regions, and whether the end of the fossil fuel era comes in the distant future or in the near future, most of us are agreed that ultimately it is going to come. That does not mean that the end will come suddenly. It simply means that our coal and oil and natural gas will become gradually less and less capable of meeting our total demands.

Taking the planetary reserve situation as a whole, it looks as if in the next century we are going to see economically tangible inroads into our total oil and natural gas reserves. Already our north-central area is being fed by pipelines from Canada, and we are laying lines into Mexico. The United States, the highest energy user in the world, pumps energy into this country from all over the planet—from Venezuela, from Kuwait, and from the Far East.

Coal, on the other hand, is in a rather special situation. It may be centuries before serious coal shortages set in. But coal is obviously a special industry demanding its own sort of technological complex and its own kind of social arrangements, and even coal is bound to increase in price as the more convenient veins are mined out. Automation on the one side and John L. Lewis and his successors on the other will affect this picture in the short run; in the long run, engineers like to think, the greatest value of coal in the future of our country is as a basic source for all kinds of chemicals, as the raw material of our vast and varied technology.

In a complex and delicately balanced society, the price of energy from various sources determines the kind of lives people can lead. No national policy that fails to take into account both the long- and the short-term projections of energy supplies and recovery costs is either realistic or viable. The American Bar Association, like all the groups that form and inform our policy, must be aware of these technological facts of life, for we are moving into a new and uncharted area.

Various people will give different dates when the energy frontier began its latest advance. Some might say it started in January of 1939, when some of us in a basement laboratory at Columbia saw the first big high-energy kicks on the oscilloscope from the fission of uranium; some might date it from 1942, when the first self-sustaining chain reaction was demonstrated in Chicago; some might date it from August 6, 1945—Hiroshima.

Certainly by that last date, all of us who had been involved in the earlier stages of nuclear technology could see quite plainly what the next epoch on the energy frontier was going to be like. Some features could be deduced from the technical facts which we had discovered. Other features we could predict from the circumstances under which we were working.

First, it was clearly apparent that nuclear energy, as a primary source of basic energy, would for some time to come be *fission* energy. In those days, of course, we had not yet exploded a hydrogen bomb; but even then we were very much alive to the possibilities of a *fusion* reaction. We saw that, from the splitting of the uranium nucleus, we could get the vast energy we needed to crush hydrogen atoms together in order to release even vaster energy. But even today we cannot visualize accurately a container that will hold nuclear fusion reactions. This is the essential problem in the control of thermonuclear energy. Ultimately, all the fissionable materials—such as uranium and thorium—will begin to face gradual exhaustion, just as coal and oil and natural gas do now. They will not be used up, but they will be unable to satisfy the total world demand. Of course, we might have blown each other to bits by then, but the human animal is tough, and the cost of destroying the entire world looks almost prohibitive. So I am fairly confident that the human animal will continue its strange career. In the distant future, we will certainly have to turn to the virtually inexhaustible resources of fusionable hydrogen isotopes in sea water. But that is a long way off.

SECOND, fission energy technology will be based, for some time to come, on uranium and specifically on one isotope of uranium —U 235. There are other fissionable materials, but, in almost all cases, their production or processing begins with the use of U 235. And U 235—enriched nuclear fuel can be produced economically only after vast capital investments in gas diffusion plants—vast complexes which now use 10 per cent of the nation's electric power production. We have heard lately of smaller-scale centrifuge and other isotope-separation devices. These work, but their product is costly and at the moment they are primarily attractive to nations which, for political reasons, are willing to pay a heavy unit cost for small quantities of homemade nuclear fuel.

We now have good estimates of normal industrial costs. The picture is hopeful. A few weeks ago, the price of uranium 235 sold to utilities abroad for power purposes was actually reduced. The reductions were around 30 per cent for enriched fuels, most useful for power purposes, even higher for other types, rather less for bomb-type uranium 235 materials. The cost of U 235-enriched fuel today is—if we could get out all the energy that is in U 235—very much less than coal, oil, or natural gas. That is, however, a major if.

THIRD, nuclear fission energy is chiefly taken out of the reactor in the form of heat. There are various scientifically interesting ways of converting nuclear energy directly into electrical energy. But these are useful primarily for space devices; in testing the major propulsion systems, we are beginning to test the nuclear energy converters we need for interplanetary travel. For the most part, our utilities will be using nuclear energy primarily in the form of heat, and uranium will be the prime fuel material. There are still technological limitations which dictate that, from an economic standpoint, nuclear-reactor energy is interesting mainly in large-scale units, such as central power-generating stations.

Many companies have been involved in atomic power plants. In New York state, for instance, I serve as the chairman of the atomic power program for the seven New York state private utility companies—Empire State Atomic Development Associates; of these, Consolidated Edison is getting under way the first New York state atomic plant at Indian Point, and a large advanced nuclear plant is under development for future construction under a broad program. Thus, the public utilities have been destined to play a leading part in the energy frontier as it moves into its atomic phase, and already atomic power is beginning to acquire some of the more settled aspects of normal enterprise.

FOURTH, because of the military implications of nuclear technology—that is, because the government has been obliged to maintain huge complexes for the production of fissionable materials, and because many power reactors produce not only energy but plutonium that can be used for bombs—it has been inevitable that this phase of the energy frontier would come under the strictest government regulation. This situation is likewise complicated by the fact that the government's large-scale economic participation can, from different viewpoints, be interpreted either as a subsidy to private enterprise, or as competition with private enterprise, or as a legitimate and mutually beneficial transaction.

Government regulation can likewise be viewed—not only in the atomic energy field, but in all the energy fields—either as stifling private initiative, as taking necessary precautions in the national interest, or as offering prudent incentives to promote important sectors of our economy. In the case of nuclear energy, the cost accounting of the nuclear complex is complicated. I am afraid it can still be said that, much of the time, no one can really know who is paying for what. In this case, as to a lesser degree with all forms of energy, the United States government finds itself inextricably intertwined with the privately owned public utilities, instead of occupying the detached position of policeman or arbitrator. Yet the government simultaneously must exercise the functions of policing and arbitration, and this makes administrative and regulatory practices seem almost schizophrenic at times.

AND there, of course, is the great danger. We have a frontier. But the frontier

spirit is in question wherever the principle of private impulse—that indispensable moral factor—is weakened.

Nothing could be more perilous today than nuclear anarchy—except perhaps nuclear mercantilism or state capitalism. We cannot close this frontier to ambition and responsible adventure, any more than we can open it to reckless plunder. It is not even the encouragement of state power that I fear so much as the atrophy of technological initiative in American industry. Every parent learns—or ought to learn—the difference between the regulation that encourages a child to mature and the control that stifles personal growth. Every parent knows that he must sometimes intervene but should rarely interfere. In the nuclear case, there are sound economic reasons now for the growth of nuclear power—it will grow inevitably. But it may not grow in a healthy way. There are many areas of an advancing society which cannot entirely be developed by means of a free enterprise economy in the old sense, I am afraid. But as this scientific and technological advance goes on, just as the trappers and traders had to go *before* the herders and the farmers on the old frontier, so the scientists and the engineers and the pilot plants must go *before* the great power stations on the energy frontier.

I hope that, as on the old frontier, they can go before the legal profession too. Let us be frank: The legal profession is ahead of the scientists in experience of regulation of technological fields. But experience has to be applied with imagination on a frontier. If, for example, the safety regulations that exist today in the aviation industry had been originally applied to private operation of the automobiles, as Boss Kettering used to say, there never would have been a great automotive industry.

LIKEWISE, we face some new and serious problems as we test whether or not a mixed economy, such as I am afraid ours has become, can develop this technology of the future. Let us take an analogy from the space frontier. We have had to admit that no individual company—not even AT&T or General Telephone—could have undertaken the space satellite program as a purely private enterprise program. But clearly at some stage, satellite technology can be applied to communications on a private enterprise basis. At what stage, and how?

Whether we like it or not, all our energy industries—from atomic energy to coal, oil, and natural gas—will have to work out constructive plans both within each industry and between these industries. There is no use pretending that coal and oil and natural gas and atomic energy are not in a sense competitive, or at least overlap in their natural economic and technological applications. There is no question at all that in the future we are going to need every bit of all those forms of energy we can get. But they do have certain special characteristics; some are more valuable in some circumstances than in others. In many areas of the electric utilities, natural gas, and coal, private industry has lagged in planning for the future. A policy for broad initiatives must extend all the way from an aggressive research and development program to integrated planning of economic factors. There are, of course, many excuses for living from day to day: We have our problems just keeping the business going, with rising costs, with labor problems, with sales, and with competition within our own industry. So we have never really dealt satisfactorily with the problem of the appropriate socio-economic rôles and the technological rôles of all of our forms of energy. In this matter, it is very clear that the federal and state restraints are a serious problem. The legal counsel always at every board meeting says, "Well now, gentlemen, we have the antitrust laws to consider here and the Holding Company Act and its provisions as well as SEC. If we do this, we will have the FPC or the FCC or the FTC on our necks." With all these tempting reasons for not acting, neither the electric utility industry, nor the natural gas industry, nor the coal industry have taken sufficiently farsighted constructive action.

OUR research and development start from the basic sciences and technology in our universities and culminate in decisions to produce. Within this range, particularly in the electronics industries, well over 50 per cent and more like 60 per cent of the direct research and development costs are being paid by the federal government. Per-

haps half of the remainder is paid for indirectly by federal money, taking all industries together. That is a sad truth: We have built into our industrial policies the expectation that the federal government will support a major fraction of our research and development. But it is also true that many of the industries, particularly the energy industries, can pay a much larger fraction of the bill if they go about it in the right way. With the recently friendly co-operation of state public service commissions, the electric utilities have found ways to provide a degree of research and development support in the atomic field which was more or less unheard of in their industry twenty years ago. A number of private utilities have had enough courage to finance almost by themselves some of the atomic power plants, using admittedly demonstration-type and research-type reactors, which are forerunners of the economic plants that are on the way now.

We still have many small energy companies operating in the traditional manner; but by themselves they can no longer fulfill their technological and economic functions unless they are part of integrated systems. There are various solutions. Pooling systems are being developed in the Midwest, in the East, and to some degree in the Far West. A number of large systems like the American Electric Power are almost regional networks in themselves. But we are going to have to look at this from a broader perspective and on a larger basis. While remaining careful about antitrust regulations, the seven private utilities in New York state are working together in the Empire State Utilities Power Resources Associates on large-scale power pooling and working *with* the New York State Power Authority.

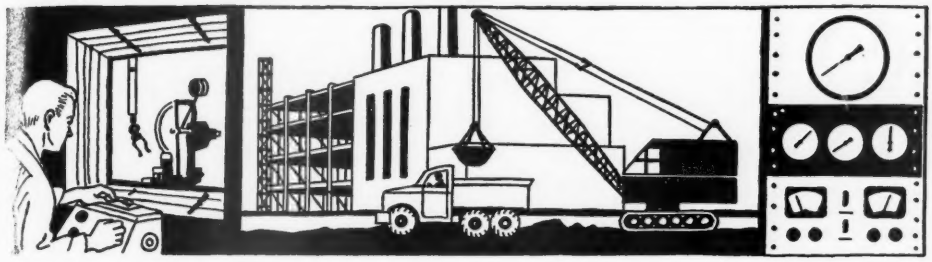
BUT when we begin thinking of New England, New York, New Jersey, Pennsylvania, and Ohio as one great region —and that is how they should be thought of—the answer of the private companies has been, "Oh, we can't possibly do that! We have all these federal and state restrictions." Fortunately, we are making progress, for either we find answers to that, or else the electrical power business will pass entirely into government hands by default. One of the major tasks of the legal profession is to preserve our mixed economy and retain the measure of private initiative we still possess by finding ways for industry to reconcile modern technology with the political-economic system imposed on it.

The utilities are understandably disturbed by Secretary Udall's firm intent to have the government build a large national high-voltage power grid. This should be an incentive for private groups to undertake regional and national planning, which the Edison Electric Institute clearly recognizes. Legal restrictions must be prevented from making it impossible for private industry to do what is necessary. And legal restrictions must not become an excuse for evading responsibility.

THE American Bar Association has a very real responsibility on this energy frontier. For the technological frontiers are moving very rapidly. And unless we have a far more positive approach—in the law and in the interpretation of the law which counsel gives industrial clients—we are as a nation going to be in more and more serious trouble.

It would seem to me very clear that the American Bar Association is the organization that can best exert impartial leadership in this area. More broadly, I hope that as we scientists and engineers uncover more and more secrets of nature and try to put them to work for society, the Bar Association and the legal profession and tradition that it represents will move with us, not behind us, in our advance on this frontier.

Industrial Progress



lic Service Elec. & Gas (N. J.) Reports Gas Growth

y Donald C. Luce, *President*

forecast at the beginning of year, 1961 is proving to be her year of growth for our com- and the area which it serves. ing the first half of 1961, total m sales of gas exceeded all pre- s records and rose 14 per cent those in the corresponding od in 1960. Total gas sales for have been estimated at 956,- 000 therms of gas, an all-time rd. Present forecasts indicate annual sales of gas will increase t 50 per cent over the next five s.

ue to increased construction of pes throughout New Jersey, and concurrent rise in population, the al demand for gas upon our em is increasing annually. To t this demand, particularly for ding heating, which is expanding at a rate of about 30,000 new ing installations a year, we are alling approximately 24,600 serv- 27,700 meters and 300 miles of ns this year. Ten years ago only 00 homes and buildings were ed by gas as compared to more 317,000 served by us at present. al gas construction expenditures ng 196 will amount to approxi- ely $26 million.

ur program of converting cus- ers' appliances from mixed gas traight natural gas is continuing by the end of this year, about 000, or 50 per cent of all our gas omers, will be served with ght natural gas.

arlier this year, the New Jersey e Board of Public Utility Com- sioners approved several company ff changes enabling us to modify gas rate schedule to provide a r rate for summer gas air- litioning on commercial and in- rial establishments. We also introduced a new rate for interruptible gas service for very large users, designed to obtain additional business from existing and prospective large customers which will aid in promoting the industrial development of our service area.

Working in conjunction with manufacturers and distributors of gas heating equipment, plumbing supply houses, plumbers and gas heating installers, we recently completed a two-month gas heating sales campaign. In the last five years, more than 54,000 customers in our territory have changed from other fuels to gas for heating. Many of these have been new installations while others have made the changeover by installing a gas conversion burner in their old furnace. We are also continuing our program of selling the advantages of living and working in New Jersey by promoting the state's many assets.

To better cope with the increased gas load, our company opened a new million-dollar gas dispatching center in Jersey City last January which is responsible for the daily scheduling of gas produced in our six gas production plants, and for allocating and controlling the delivery of natural gas at our metering stations. By early next year we hope to have an operational information system for gas dispatching installed in the new center. This computer system will perform data gathering and determine load conditions based on weather predictions from two outside sources. All of our metering stations eventually will be operated by remote control from the dispatching center.

Two Utilities Order Complete Digital Telemetering Equipment From G-E

Pennsylvania Electric Company, Johnstown, Pennsylvania, and Gulf States Utilities Company, Beaumont, Texas, will be among the first utilities to use General Electric's new digital telemetering equipment, according to a recent announcement. Installation of both systems will be completed by the end of 1961.

It is expected that the two utilities will realize considerable savings in time and money through this automatic and highly accurate transmission of data. At the same time, human error is eliminated, since no further refinement of data is required, according to G-E engineers.

In the Pennsylvania Electric Company application, the equipment will transmit kilowatt demand information from six remote interconnections with a large industrial user of electricity. Information coming into the central load dispatch office will be logged by individual location, show exact time of reading, total demand, total kilowatt-hours and maximum demand for the month.

Similarly, the Gulf States Utilities Company equipment will transmit kilowatt-hours in and out information from six remote interconnections into a central dispatching office upon command of remote demand meter clocks. Information will be logged by location on an electric typewriter, showing exact time of reading and total kilowatt-hours in and out.

The new G-E digital telemetering equipment to be used by both companies is a development of the company's Instrument Department, West Lynn, Mass.

Semiconductor Microwave Switch Developed by RCA

The development of a semiconductor microwave switch for C-band applications was announced recently by RCA's Aerospace Communications and Controls Division, Defense Electronic Products.

(*Continued on page* 20)

The switch, developed under the sponsorship of the Advanced Research Project Agency, Department of Defense, has an average power handling capability of two watts at the design frequency of 5585 megacycles, with an insertion loss of less than 2 decibels from 5000 to 5900 mc. Isolation is greater than 50 decibels over the same range, and rise and fall times of the output pulse are less than 0.1 microseconds.

The RCA switch, having passed all MIL-E-5400 environmental tests, presently is available for C-band applications only. However, models capable of operating at other frequencies are under development. Use of the switch as an electronically controlled attenuator also is being considered.

Loop Closed in IBM's 1710 Control System

A faster, more powerful 1710 control system—capable of governing industrial processes without human intervention—has been announced by International Business Machines Corporation.

IBM's initial entry into the field of process control, the 1710 was introduced last March as "open loop" system. When used in this manner, the solid-state 1710 scans instruments, feeds the data into a computer and then prints instructions telling an operator what action to take in controlling a process.

Now the loop has been closed. Utilizing two new units, the 1710 system no longer requires intervention by an operator to regulate a process. The adjustment of instrument settings can be made fully automatic.

The new additions are—

A 1712 multiplexer and terminal unit, and

A 1711 data converter, model 2.

The multiplexer serves as the connecting link between process instruments and the control system. The data converter—specially designed to work with the multiplexer—converts instrument signals into language understood by computers.

These units, together with an IBM 1620 computer, comprise the expanded IBM 1710 control system which has closed-loop capability. Industries in which the 1710 ma used include petroleum refi chemicals, utilities and general m facturing.

"With the 1710's expanded ab IBM can provide answers to m more control problems," said Wi G. Stevenson, manager of co systems marketing for IBM's Processing Division.

"We are offering a building-b system—backed up by a complet of programming packages—that handle applications ranging data logging, monitorin and op tional guidance to complex clo loop control."

When a 1710 syste is not gaged in control or data collec its 1620 computer can be used i pendently for research and engi ing computations. Present 1620 u can extend use of their syste operations control by adding the multiplexer and data convers units.

The expanded 1710 system ha approximate price range of f $125,000 to $250,000. Approxi rental is from $3,000 to $6,00 month.

$30,000,000

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October 3, 1961.

INDUSTRIAL PROGRESS—(*Continued*)

Baltimore Gas & Elec. Dedicates Crane Station

Baltimore Gas and Electric formally dedicated its Charles P. Crane Steam-Electric Generating Station recently. Located on a 164-acre tract on the west shore of the Chesapeake Bay between Seneca and Salt-water Creeks, about four miles east of the Middle River community in Baltimore county, the plant houses the largest and most efficient generating unit on the company's system. The first 191,000 kilowatt unit was recently placed in commercial operation and a second unit of similar size at the same site is under construction. This new plant cost $37.7 million, including the cost of the site and facilities installed on the site with the first unit. In addition, approximately $2 million has been spent for transmission line and substation equipment to carry electric power from the plant into the company's system.

The new station is named in honor of Charles P. Crane, chairman of the executive committee and former president and chairman of the board of the Baltimore Gas and Electric Company. Mr. Crane began his career with the company on September 19, 1910, 51 years ago in the executive department. He was elected vice president in 1938, executive vice president in 1946, and president in 1950. In 1955 the board of directors placed him the dual responsibility of chairman of the board and president. At his own request, he relinquished the office of president in 1957 and likewise chairmanship of the board in 1961. He has been a director of the company since 1946.

$8 Billion Transmission Program Expected by Investor-Owned Utilities

Investor-owned electric utility companies in the United States plan to spend about $8 billion for new electric power transmission facilities through 1970. This will more than double the present transmission investment of $6.7 billion.

Virtually all of the power systems east of the Rocky Mountains, including 100 companies in 32 states, are now interconnected. In the far west, interconnected services have been in effect many years. The next step will be the complete interconnection of the nation's major power systems, built by investor-owned companies.

$1.2 Billion Program Planned by Public Service E & G

Public Service, Electric and Gas Company plans to spend approximately $1.2 billion in the next decade for new plant and equipment in anticipation of demand for services as the territory served by the company continues to grow according to Donald C. Luce, president. Included in this expenditure of over a billion dollars will be additional high voltage transmission facilities costing about $145 million. There will be 154 miles of new 230,000 volt lines installed over a ten-year period.

$40 Million Program Planned By Kentucky Utilities

Kentucky Utilties Company plans to spend approximately $40 million for new electric power transmission facilities, $23 million of it as part of the $8 billion

(*Continued on page 22*)

Do You Need Help Over One Of These Danger Points?

- **Company growth has created new management functions, or forced realignment of existing functions, with attendant organization problems.**
- **You expect the loss of key executives with no one to replace them.**
- **Costs in one of your departments are out of line.**
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transmission expansion by America's investor-owned electric companies for complete interconnection of the nation's power systems by 1970, according to W. A. Duncan, operating vice president.

The growth of Kentucky Utilities, like that of nearly all the other investor-owned power companies, has been one of integrating hundreds of small isolated electric systems, merging them and pooling their resources.

During the first dozen years the company was operating, most of the population which received electric service was supplied by local plants. Gradually the towns were connected with transmission lines and as these towns became parts of the transmission network, it became desirable to build interconnection with neighboring utilities. In 1924, K.U.'s first interconnection was made with Central Illinois Public Service Company across the Ohio river near Shawneetown, Ill. That year the K.U. system at Dix Dam was interconnected with Louisville Gas and Electric at Louisville. Other interconnections have been made over the years, the most recent being with the Ohio Valley Electric Corporation near Carrollton.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, JULY 2, 1946 AND JUNE 11, 1960 (74 STAT. 208) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF Public Utilities Fortnightly published fortnightly at Baltimore, Maryland for October 1, 1961.

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Frederick A. Lavey, Business Manager

Sworn to and subscribed before me this 14th day of September, 1961.

Josephine A. Olker
Notary Public

(My commission expires August 31, 1963)

Con. Ed. Orders World's Largest Turbine Generator

Con. Edison has ordered the world's largest turbine generator, Harland C. Forbes, chairman, announced recently. It is expected to have a capability in excess of 1,000,000 kilowatts. The order for the unit has been placed with Allis-Chalmers. The budgeted cost of the entire generating facility is $131,000,000. Completion is scheduled for early 1966.

Recent developments in technology, Mr. Forbes said, have made machines of this size, with the consequent substantial savings in investment costs per kilowatt of power, feasible for utility systems large enough to absorb the great blocks of power the machines represent. Large as the machine is, however, it will produce less than half the electricity needed to supply the nine square mile area between 59th Street and the Battery.

Con. Edison's present capacity is over 5,000,000 kilowatts and this will rise to over 6,500,000 kilowatts when generating units now under construction are completed. Through existing interconnections with neighboring utilities the company is part of a 40,000,000 kilowatt block of generating capacity which stretches from Montauk to Quebec, from Maine to Michigan.

Con. Edison has long had ties with Niagara Mohawk Power Corporation and with Long Island Lighting Company. A new high voltage tie was recently completed with Orange and Rockland Utilities. Next year additional ties with Niagara Mohawk will quadruple the exchange capacity between the two systems. Investigation of ties with Public Service of New Jersey at several points and wil the Connecticut companies is well advanced.

Northern Natural Gas Plans $11 Million Expansion

Northern Natural Gas Company recently filed an application with the Federal Power Commission requesting approval to bring natural gas service for the first time to 65 communities including one in Nebra three in Iowa, 44 in Wisconsin 17 in Minnesota.

Northern proposes to const approximately 14 miles of 26 main line loop, east of its Wate Iowa, Compressor Stati n, and miles of branch lines ranging in from two to 16 inches. The cos the program is estimated at $11 lion.

The gas requirement of the new communities, amounting to million cubic feet per day, wil supplied from North n's un ground storage field located Redfield, Iowa. Norther officials dicated they are hopeful that necessary Federal Power Commis approval can be obtained in tim allow for the completion of the gram prior to the 1962-63 hea season.

Natural Gas Storage Plans Increase Withdrawal Capac

Natural Gas Storage Company Illinois is seeking to further incr its peak day withdrawal capa from underground storage facil at Herscher and Cooks Mills by million cubic feet of gas to 833 lion.

Mark V. Burlingame, execu vice president of Natural Gas S age, said that if the project is proved for 1962 construction it be the fourth consecutive annual pansion of this size. The sto company is a subsidiary of The B ples Gas Light and Coke Company

Mr. Burlingame said that a p tion has been filed with the Fed Power Commission for approval the $3,300,000 project. It includes drilling of additional wells and installation of more compressor f ities at Herscher.

EEI Issues Glossaries On Utility Terms

An 84-page *Glossary of Elec Utility Terms* and a 16-page *Nuc Supplement to the Glossary of E tric Utility Terms* have been p lished by the Edison Electric In tute.

The *Glossary*, an expanded r sion of the 1956 edition, cont definitions of about 400 of the p cipal financial and techn cal rep ing terms relating to the elec utility industry which appear in statistical publications of the In tute. A two-page listing of abbre

of terms most commonly used
ried in the *Glossary*.
e *Nuclear Supplement* is a com-
on of definitions of about 80
relating to the electric indus-
nuclear development program,
of which are listed in the 1961
ral Power Commission Uniform
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th booklets are available from
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Gas Industry Sees Growth urred By Air Conditioning

he gas industry will be serving
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up 114 per cent more sales reve-
by 1970 it was predicted recently
n interim report to the Gas Ap-
ce Manufacturers Association's
members.
gns of a record-shattering decade
the industry already are evident
in the field of residential, commercial and industrial gas air conditioning, said William G. Hamilton, Jr., president. By 1964, he predicted, gas air conditioning will have become a major factor in balancing year-round demand for natural and liquefied petroleum (bottled) gas.

Sales of gas heating equipment in 1940 were "so negligible that there was no need to keep records," said Mr. Hamilton, who is also president of the American Meter Co., Philadelphia, but now, he pointed out, gas is the nation's No. 1 heating fuel, having accounted for nearly 25 per cent of the 92.9 billion therms of utility gas sold in 1960.

Mr. Hamilton predicted that the number of residential gas heating and cooling customers of the utilities alone will increase 65 per cent by 1970, and that similar progress is likely in rural and suburban markets where homes are served by LP-gas.

"In the past, the end of each heating season meant having to find summer markets of gas," said the GAMA official. "Now it appears, from the way builders and homeowners are adopting the fuel for both cooling and heating, that this problem of market-balancing will soon be eliminated."

Mass production and popular pricing of gas refrigerators, development of "plug-in" gas appliances for indoor and outdoor use and major developments in pipeline technology are among other advances forecast by Mr. Hamilton.

Power Partners Pool Resources

Four neighboring power companies have signed a contract to pool their power resources in the Carolinas and Virginias.

The four are Carolina Power & Light Company, Duke Power Company, South Carolina Electric & Gas Company and Virginia Electric and Power Company.

The same combination joined hands in 1956 to start building the Southeast's first atomic power plant —at Parr, South Carolina. The four say the success of this "demonstrates the feasibility of co-ordinated effort on a wider scale."

CP&L and Duke Power operate in both the Carolinas. South Carolina Electric & Gas serves in that state; and Vepco operates in North Carolina, Virginia and a small part of West Virginia.

Louis V. Sutton, president of CP&L, said that the new power pool will permit maximum use of recent technological developments "to attain even greater security and economy of service." He stated that persistent inflation has confronted the industry with the necessity of achieving greater economies of operation in order to continue present low rates.

The four-company power pool, Mr. Sutton said, will permit close coordination of effort on three fronts: power generation, power transmission and resultant cost-benefit allocations.

The four-company contract contemplates joint, long-range planning of new construction—both for generating capacity and for transmission high-lines. The four associates will devise formulae for allocating both the costs and the benefits on an equitable ratio.

Already, calculating board studies are being made to determine the most strategic sites for future generating facilities as well as the most efficient transmission networks and voltage levels to carry power from such locations. These studies cover the combined service areas of all four companies.

For many years the companies have had separate, individual contracts with each other and with adjacent companies for emergency power and for interchange of firm power and surplus. This long-standing policy of co-operation and coordination has resulted in tying the systems together through many interconnections. The high-voltage lines have been woven into a super-grid touching not only the four companies but also neighboring utilities throughout the Southeast.

Philco Literature Catalog For Computers Available

Philco Corporation's Computer Division announced the availability of a new catalog which lists all currently available material on the Philco 2000 electronic data processing system. The catalog includes a list of programming, research and development notes, sub-routines, program reports, brochures, manuals, charts and cards, forms and general description of Philco electronic data systems such as the Philco 2000, Philco 2400 and Philco C-3000.

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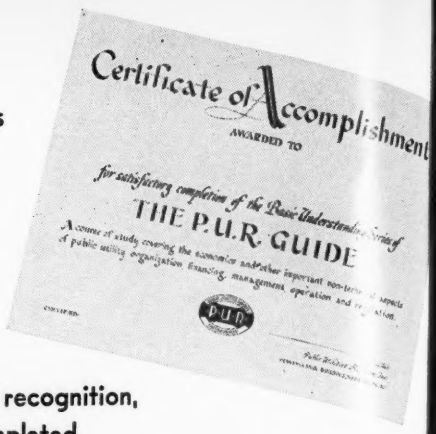

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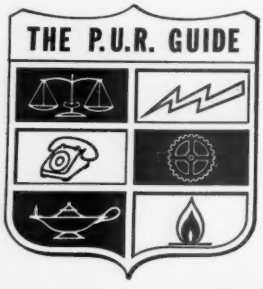

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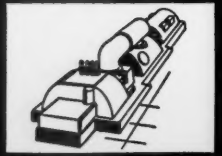
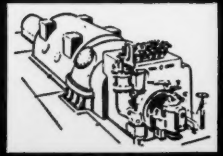
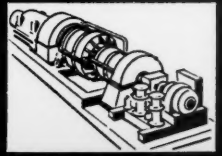


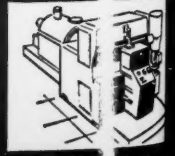
Steam turbine-generators for large blocks of power



Steam turbine-generators 100,000 kw and lower



Gas turbines for peaking, base load, combined cycles



Mechanical drive steam turbines for auxiliaries